

23 November 2022

Baby F

CONTENTS

MS SHELLEY TOMLINS (affirmed) (via video link)

Examination-in-chief by MR ASTBURY

Cross-examination by MR MYERS

Re-examination by MR ASTBURY

DR SALLY OGDEN (recalled)

Examination-in-chief by MR ASTBURY

MS SOPHIE ELLIS (recalled)

Examination-in-chief by MR ASTBURY

MS BELINDA WILLIAMSON (recalled)

Examination-in-chief by MR ASTBURY

Cross-examination by MR MYERS

Housekeeping

Wednesday, 23 November 2022

(10.30 am)

(Delay in proceedings)

(10.42 am)

(In the absence of the jury)

MR ASTBURY: My Lord, apologies for the delay. We are ready to start now.

MR JUSTICE GOSS: That's all right, thank you.

(In the presence of the jury)

MR JUSTICE GOSS: Sorry about the slight delay. We are now linked in to Australia.

MR ASTBURY: I call, please, Shelley Tomlins.

(Pause)

MR JUSTICE GOSS: Anything on your screens yet?

MR ASTBURY: We have tested the system.

MR JUSTICE GOSS: By the way you were looking around, I thought that was the case.

(Pause)

MR ASTBURY: While we're waiting, in testing the system, we've checked that Ms Tomlins can see any document that comes up on the screen. Unfortunately, it means we won't be able to see her when that's the case.

MR JUSTICE GOSS: We've had this before, do you remember?

When a witness is seeing a document that we're seeing on the screen, we can't see the witness. At the moment we can't see the witness anyway. I know because I've got the same screen as you have there.

(Pause)

Can you see it now? Good. Can everyone see all right? You might have to move your chairs a little bit if necessary. Over to you.

MR ASTBURY: I call Shelley Tomlins, please.

MS SHELLEY TOMLINS (affirmed) (via video link)

Examination-in-chief by MR ASTBURY

MR ASTBURY: Could we start with your full name, please?

TOMLINS: Yes, Shelley Anne Tomlins.

ASTBURY: Thank you. Your profession, please, Ms Tomlins?

TOMLINS: Full-time student at the moment, but still a registered nurse.

ASTBURY: Thank you. Were you employed in that capacity at the Countess of Chester Hospital between April 2011 and October 2015?

TOMLINS: Yes, I was.

ASTBURY: Were you at that time a band 5 staff nurse?

TOMLINS: Yes.

ASTBURY: But had you completed additional qualifications specific to neonatal nursing?

TOMLINS: Yes, I completed the introduction to neonatal nursing and the special intensive care of the newborn in Liverpool.

ASTBURY: Thank you. I'm going to ask you, please, about two day shifts that you completed on the 4th and 5 August 2015.

TOMLINS: Okay.

ASTBURY: I appreciate, when you provided a statement to the police, you relied on the notes that had been made available to you; is that right?

TOMLINS: Yes.

ASTBURY: So largely I'm going to take you through the notes, but we'll pause and try to recall some detail at certain points.

TOMLINS: Okay.

ASTBURY: Thank you. So if we could begin, please, with 4 August 2015. The jury will hear that your colleague, [Nurse B], was the designated nurse during that shift for [Baby F], about whom I'm going to be asking you.

TOMLINS: Okay.

ASTBURY: I'm going to ask that tile 64 be put on the screen. If we can look at that, please, the underlying material.

Can you see that clearly, Ms Tomlins?

TOMLINS: Yes, I can.

ASTBURY: Thank you. An observation chart, as you can see, in the name of [Baby F], dated from the 3rd into 4 August of 2015.

TOMLINS: Okay.

ASTBURY: If we can scroll down, please, to the bottom row. I'm going to ask if you can see your initials anywhere in any column.

TOMLINS: Yes. It's in one of them.

ASTBURY: Perhaps if you could tell us -- is it -- if we look about two-thirds across to the right, we can see, bearing in mind your introduction, "SAT".

TOMLINS: Yes, that's me.

ASTBURY: If we scroll up that column we can see that that entry was made at 10 am on 4 August.

TOMLINS: Yes.

ASTBURY: As we scroll down the column, can you confirm, please, that the entries that you've made on each occasion fall within what we understand from this chart are the acceptable levels for a neonate?

TOMLINS: Yes, they do.

ASTBURY: Thank you. In a similar vein, please, if we can go to tile number 66. Again, if we can perhaps just concentrate initially on the row at the bottom of the left-hand page. Is this another form that you'll be familiar with from your time in Chester?

TOMLINS: Yes. That's the ICU observation chart. It's small but I can see myself again in the 10 am column, I think, yes.

ASTBURY: Thank you. That's what I was about to ask you.

Thank you very much.

If we go up the column, can you confirm they are entries that you made in respect of various equipment settings and readings in relation to [Baby F]'s treatment?

TOMLINS: Yes, I made those entries.

ASTBURY: So would that be consistent with you perhaps assisting [Nurse B] with [Baby F]'s observations at around 10 o'clock in the morning on that day shift?

TOMLINS: Yes.

ASTBURY: We're going to move on, please, to 5 August, another day shift that you worked. We understand that would have been between 7.30 in the morning and 8 in the evening.

TOMLINS: Yes.

ASTBURY: Again, did you rely on the medical notes that were made available to you to compile the statement that you provided to the police?

TOMLINS: I did, yes. I had pretty much no memory of that particular day.

ASTBURY: Thank you. If we go first, please, to tile 212. I hope you'll see a representation of the start of your day shift. So the designated nurse for [Baby F], were you able to confirm that from the notes?

TOMLINS: Yes, I was, yes.

ASTBURY: Thank you. If we go to the next tile, please, and we look at the material behind it. I'm going to ask Mr Murphy, please, to zoom in on your entry at 8 am.

I think in fact they're to the right, if I recall, of the forms as opposed to the left, sorry. That first paragraph.

So again, this is a form which I'm sure you're familiar with, Ms Tomlins, and I think we're becoming familiar with. These are the nursing notes that you would enter from time to time on a computer system known as Meditech; is that right?

TOMLINS: Yes, that's right.

ASTBURY: If we look along the second line of text in the box, created 5 August 15, 08.40. Then a second time, 8.42.

From your recollection, would that show the time the note started and ended by way of input to the computer?

TOMLINS: I think so, yes. I can't be sure, but that seems logical. It'd take about 2 minutes.

ASTBURY: We can see your initials next to those two timings?

TOMLINS: Yes.

ASTBURY: Okay. So if you could just take us through, please, if you can, that entry and perhaps what some of the nursing references mean or might mean in practice. So we've got:

"8 am to present [presumably 8.42]: care taken over for the long day."

TOMLINS: Yes. So care taken over for the 12.5-hour day shift; we called them long days.

ASTBURY: You've then got a note to say that [Baby F] was being nursed in Optiflow, 7 litres in air.

TOMLINS: Yes. I was just going to confirm 7 litres of flow via the Optiflow, but no extra oxygen to what any of us were breathing, just 21%.

ASTBURY: Okay. You observed:

"No desaturations."

Is that right?

TOMLINS: Yes.

ASTBURY: And you recorded a heart rate around 180 to 190 beats per minute?

TOMLINS: Yes.

ASTBURY: Can you tell us anything about that sort of heart rate?

TOMLINS: Yes, that's quite fast, so that's quite tachycardic.

I can't remember off the top of my head what the normal range... It's slightly elevated in my opinion.

ASTBURY: We'll come back to that in a moment. Other observations you've recorded as normal?

TOMLINS: Yes.

ASTBURY: You've then recorded the fluid allowance, which we understand relates to the administration of something called total parenteral nutrition.

TOMLINS: Yes, that's right.

ASTBURY: Is this right, that [Baby F] was also receiving lipid and a 10% dextrose solution in addition to that TPN?

TOMLINS: Yes, that's what I've got in my statement as well. So the three of them all together would be equal to 165ml per kg per day.

ASTBURY: It says "infusing via a long line". We've heard something about a long line. Just in brief, please, describe to us how those three fluids would enter via the same long line.

TOMLINS: It would be -- I can't remember what we called them at Chester, but the long line itself that goes into the baby is just one long really thin white line and then we would have an infusing set, which would sort of divide the fluids into three, so there'd be three different bungs, which we would attach -- one would be the TPN, one would be the lipid and one would be the dextrose -- and they could all infuse together via three different ports, if you like.

ASTBURY: Okay. Those ports introduce them individually into the same long line?

TOMLINS: Yes. As far as I can remember, that's how we did it at Chester, yes.

ASTBURY: Right. You've noted, "Site is satisfactory"; what's that referring to?

TOMLINS: Referring to whether there's any redness or swelling or bleeding or signs that it's tissued.

ASTBURY: Okay. What do you mean by tissued, please?

TOMLINS: That's the sort of slang we would use for when the line was no longer in a vein -- so the proper word is extravasated, I think. It means the tip of the line is delivering fluid into tissues around a vein rather than into the bloodstream.

ASTBURY: Right. And therefore ceasing to be effective?

TOMLINS: Oh, sorry, could you repeat that?

ASTBURY: And thereby ceasing to be effective; is that right?

TOMLINS: Oh yes, that would stop it from working properly, yes.

ASTBURY: You put:

"Line very positional."

Can you explain that, please?

TOMLINS: Yes. Quite often the babies would cause the infusion pumps to alarm for high pressure. Often it was to do with them bending their arm or their leg, so often we would have to put splints on their limbs to try and keep them straight because, yeah, if their arm or leg was bent sometimes the pressure was too high for the fluids to go through.

ASTBURY: So does that line mean that the location of the long line was at risk of that sort of problem?

TOMLINS: I would say so, yes. Usually they all would have issues with being positional. It was a really common problem, yes, that we used to encounter.

ASTBURY: Okay. BM, we understand, is a representation of blood sugar levels.

TOMLINS: Yes.

ASTBURY: It indicates this morning, 1.7.

TOMLINS: Yes. That's low.

ASTBURY: It's very low. And perhaps that explains the next entry:

"Therefore bolus of 3.5ml 10% dextrose currently infusing over 15 minutes."

TOMLINS: Yes.

ASTBURY: So is that an attempt to increase, by way of the introduction of dextrose, those sugar levels?

TOMLINS: Yes, like an additional extra bolus on top of the fluids he was already having to try and correct it.

ASTBURY: So is that in addition to the 165ml of combined TPN, lipid and dextrose solution?

TOMLINS: I believe so, yes. As far as I can remember, it was just extra additional.

ASTBURY: When it says infusing, is there anything significant in that?

TOMLINS: Not that I can recall. It's just (overspeaking) --

ASTBURY: How would that additional -- sorry.

TOMLINS: Oh sorry. You go on.

ASTBURY: How would that additional bolus have been provided?

TOMLINS: I imagine through the long line. When I left my statement, I was unable to tell from the notes whether he had any additional peripheral cannulas, I wasn't certain, so I think it was via the same long line as the other fluids, but I can't be sure.

ASTBURY: Okay. The next line talks about U&E and SBR. Could you explain that, please?

TOMLINS: Yes. U&E means urea and electrolytes, and SBR means serum bilirubin levels, so blood tests.

ASTBURY: Okay. So they were being monitored, therefore taken that morning?

TOMLINS: Yes.

ASTBURY: "Under single lights with eye mask in situ"?

TOMLINS: Yes, that refers to single phototherapy lights. So he already had jaundice, so that would have been why we took the bilirubin blood test. So under one set of lights with eye goggles on just to protect the eyes.

ASTBURY: If we could go next, please, to tile 214. We looked at the day before when you'd made one entry. I think if we just scroll to the bottom we can see that perhaps, because you're designated nurse for [Baby F], we can see that you've made effectively all of the entries from the time you came on duty.

TOMLINS: Yes, that's right. Yes, 8 am to 7 pm. They were all me.

ASTBURY: We've already scrolled up, but we can see -- we have looked at the heart rate the day before when you entered it within the white band. We can see here that from 8 am, I think, which is your first entry, certainly up until 11 o'clock, does that suggest that -- you've recorded 180 to 190 beats per minute in your note and we can compare the numbers there -- that that, did it, continued to be the case from 8 until at least 11 o'clock that morning?

TOMLINS: Yes. Each of those is tachycardic, looking like one -- yes, maybe 180 to... It might be 195. It's hard to tell because the numbers don't quite line up with the lines. But yes, I think 180 to 195.

ASTBURY: Does the yellow band signify anything in particular?

TOMLINS: Yes, the yellow band means the parameters are either above what they should be or below. In that case it's higher than you'd expect.

ASTBURY: Okay. We'll come to the period after 12 o'clock a little bit later, but if we can just scroll down again and look at that time between 8 and 11 o'clock.

Respirations within the white line, a little bit raised towards midday again. Would you agree?

TOMLINS: Yes. Sorry, I didn't keep an eye on what column was what, but it looks like they're up around 60 in the middle of the day and then slightly raised again towards the middle of the afternoon, I think.

ASTBURY: Yes.

TOMLINS: Yes.

ASTBURY: Okay.

TOMLINS: Always within normal parameters, but at 3 o'clock almost higher than they should be.

ASTBURY: So at the ceiling of what you might expect?

TOMLINS: Yes.

ASTBURY: If we can move on, please, in a similar vein to tile 215, and look at the right-hand page, please.

A form we looked at a few minutes ago from your preceding day shift. Again, a form you're familiar with?

TOMLINS: Yes, I'm familiar with this.

ASTBURY: If we read down, please, to 8 o'clock in the left-hand column, and if we look at that row, that's your first entry for the day shift?

TOMLINS: Yes.

ASTBURY: We can see in the input column for boluses or bolus, would that represent the dextrose bolus that you discussed in the note and when I asked you about the note?

TOMLINS: Are we able to make it a tiny little bit bigger, please, if that's all right?

ASTBURY: I'll certainly try.

TOMLINS: Thanks. It's a little bit fuzzy.

ASTBURY: Someone's nodding behind me so if you can just wait.

Thank you.

TOMLINS: Thanks. Yeah, that's better.

ASTBURY: Reading across from 8 am -- thank you, Mr Murphy.

That's your first initial, I think, for the shift on the right-hand side?

TOMLINS: Yes.

ASTBURY: And reading across, in the bolus column, that's in the input side of the form, it appears to be a bolus.

TOMLINS: Yes, 10% dextrose, 3ml it looks like.

ASTBURY: We can see his blood sugar entered at that time, to the right, of 1.7.

TOMLINS: Yes.

ASTBURY: Again, consistent with your note that we looked at from 8.40 to 8.42?

TOMLINS: Yes, that's consistent.

ASTBURY: Just carrying on until that time round about midday, as we go down the columns, is that another bolus at 10 am?

TOMLINS: Yes, another 4.3ml at 10 am.

ASTBURY: So a larger bolus at 10 am?

TOMLINS: Yes.

ASTBURY: If we look across to the corresponding blood sugar level.

TOMLINS: 1.3, I think that says.

ASTBURY: Yes. And the observations on that level?

TOMLINS: Dropped further (inaudible: distorted) than the 1.71.

ASTBURY: So he's had 7.3ml between 8 and 10 o'clock --

TOMLINS: Yes.

ASTBURY: -- without raising the sugar level, as was hoped; would that be right?

TOMLINS: That would be right. I don't know what came first in that column for 10 am, the bolus or the sugar.

I don't know whether we got that sugar of 1.3 and then we gave that bolus or whether we gave that bolus and the sugar -- it's hard to tell based just on this.

I imagine it's probably the blood sugar level and then the bolus.

ASTBURY: Okay. So one prompting the other?

TOMLINS: I think it would probably be that way round, but it's hard to tell just based on this.

ASTBURY: Okay. I'd like --

MR JUSTICE GOSS: Sorry, before we leave that, the writing to the right, is that of any significance?

MR ASTBURY: Certainly. There is a figure in brackets, Nurse Tomlins. Does that tell us anything? That's at the 8 o'clock entry, first of all.

TOMLINS: Brackets to the 8 o'clock... Ah yes, 1.7ml per kg per hour, I think that says. HR, I think.

ASTBURY: I think it says 1.4.

TOMLINS: Yes, 1.4, sorry, ml per kg per hour, I think that says.

ASTBURY: Okay. What would that refer to, please?

TOMLINS: I think that would be the rate at which we -- oh, hang on a minute, I'm in the urine column. That's his urine output, I think, 1.4ml per kg per hour. Because that's written in the column with the urine and where the bowels are opened. So that's what I think that is.

ASTBURY: Okay. There's another entry, I'm not sure it's quite as clear, in the 10 o'clock entry that I was asking you about. Can you help us with that at all?

TOMLINS: Yes. So that number there, I don't know if that says 12 or 2ml, and then I've put "discarded mucky". So that was an aspirate from the NG tube. If it was a little bit mucky, we wouldn't give it back, we would just throw it away. But I'm not sure whether that's a 12 or a 2.

ASTBURY: Mucky meaning, please?

TOMLINS: I can't remember the aspirate, but usually it would look maybe brownish or it would just -- it would maybe not look how you would expect semi-digested milk to look.

Maybe just a bit murky in colour and -- yeah, I can't remember exactly what that particular aspirate looked like, but I imagine it was probably brownish.

ASTBURY: All right. Can we go next, please, to tile 217.

Another form, Ms Tomlins, the blood gas record. If we could look at the entries from 5 August, please, on the left-hand side.

Again just concentrating on that period up until around midday, there are two entries on the form, which, reading across, appear for your initials; is that right?

TOMLINS: That's correct, yes.

ASTBURY: Indicating at 08.09 the glucose level was 1.7?

TOMLINS: Yes, that's correct.

ASTBURY: And at 11.46, 1.4?

TOMLINS: Yes, that's correct.

ASTBURY: Despite the two boluses that we've just looked at on the fluid balance chart?

TOMLINS: Yes.

ASTBURY: We look next, please, to tile 219. For the sake of completeness, that's a prescription for the administration or another infusion of glucose. Do you recognise that type of form?

TOMLINS: Vaguely, yes. Not as good a memory of this one because I suppose I didn't write it, so -- but yeah, I do vaguely remember these.

ASTBURY: All right. If we scroll down, we can see on the computer certainly you're entered as the user for having administered the glucose; is that right?

TOMLINS: Yes, that's right. That's me, N.Toms.

ASTBURY: Do the times assist with when that prescription refers to? It's scheduled at 12. It appears to have been administered at 8.30 and then is filed at 12.59. Can we conclude anything from those entries?

TOMLINS: I'm just reading the details. Hang on.

ASTBURY: Please take your time.

(Pause)

TOMLINS: Yes, I think it means I administered it and [Nurse C] signed it. I'm not sure why it was scheduled for midday, but it would obviously have been something that was meant for right then, so we obviously gave it at 8.30.

ASTBURY: If we go back to the carousel, please, and we look at the next tile, 220. Again, another form, is it, that you might recognise from your time at Chester?

TOMLINS: Yes, I recognise these.

ASTBURY: If we go, please, to the left-hand column and the dates of 5 August. I think the first one is far from the cursor.

TOMLINS: Yes, I see that.

ASTBURY: Do you recognise your initials or signature in the "given by" column?

TOMLINS: Yes, that's me, the first one being -- I think we signed it for 10.15, myself and -- I think that's Ailsa Simpson.

ASTBURY: Right.

TOMLINS: Yes.

ASTBURY: Don't worry about the signatures of others, as long as it's --

TOMLINS: Okay.

ASTBURY: Then a little bit out of time order, I think, is the earlier 3.5ml bolus, which is timed at 8.30, which is consistent with the form we just looked at. So we go --

TOMLINS: Yes.

ASTBURY: -- 10.15, then 8.30.

TOMLINS: Yes. Maybe they were prescribed retrospectively. Yes, that's my signature as well.

ASTBURY: Okay. As it happens we can see that there were further boluses through the afternoon, again 3.30, 3.15 and 4.20 pm; is that right?

TOMLINS: Yes, that's right.

ASTBURY: Thank you. We can go back to tile 221, please. Back to your notes on the Meditech system, please. If we can go into the notes, Mr Murphy. Thank you.

I think this has been put in at this stage because it's a commentary that follows events first thing in the morning when you came on duty. If we can go through that with you, please.

The blood sugar level, around 30 minutes after that first bolus, confirming I think what you thought from the fluid chart, was 1.4.

TOMLINS: Yes.

ASTBURY: Then a further 3ml bolus administered over a 15-minute period.

TOMLINS: Yes.

ASTBURY: Then you talk -- we touched before on the long line and the question of tissing. The next line indicates:

"In the meantime long line noted by doctors on ward round to be tissued with puffiness evident on upper right leg."

Do you recall that from your memory?

TOMLINS: No, I don't, I'm afraid.

ASTBURY: Okay:

"Fluids immediately stopped via this route. New long line sited into left leg with aseptic technique."

Do you recall the new long line being inserted?

TOMLINS: No, I don't, sorry. Just from my notes.

ASTBURY: Okay:

"X-ray confirmed and new fluids of TPN and lipid now infusing via new long line."

TOMLINS: Yes.

ASTBURY: So I'll come back to it in a minute, but fluids reinstated once the new long line has been fitted?

TOMLINS: Yes.

ASTBURY: Who would fit a new long line?

TOMLINS: One of the doctors. I can't remember which one, but it wasn't a nursing job.

ASTBURY: Okay. It says:

"Fluids reduced to 150ml/kg/day, therefore 10% dextrose stopped."

Just explain that line to us, please.

TOMLINS: I think what it means is -- I can't remember exactly what the guidelines were, but in the first few days of life babies could only receive a certain amount of millilitres per kilogram per day of TPN, so if they needed more fluids than what they were allowed to have of just TPN, we would top it up, if you like, with the 10% dextrose. So I think because his fluids were reduced, he no longer needed to have the dextrose, he could just have it all, TPN and lipid. That's what I take that to mean but I can't quite remember off the top of my head.

ASTBURY: The quantity of the fluids for the day was being reduced, I think from 165?

TOMLINS: Yes.

ASTBURY: And as a consequence, the additional dextrose was ceased?

TOMLINS: Yes, that's right.

ASTBURY: CBGs, please?

TOMLINS: Capillary blood gases.

ASTBURY: Okay. They remained good:

"SBR below treatment line."

Could you explain that, please?

TOMLINS: Yes. Serum bilirubin levels, once they drop below a certain parameter, which is again based on how many days old the baby is and how many weeks premature they are. Once it drops below the line, they can stop the lights, but I think we like them to be 50 below before we would take them off. So even though he was below the treatment line, I think we were carrying on with the lights until he was more below, if that makes sense.

ASTBURY: Yes, thank you:

"Repeat BM [which is the blood sugar level] at 2 o'clock."

Is that right?

TOMLINS: Yes, that's right.

ASTBURY: Then the next line:

"Discrepancies evident between gas machine and BM machine."

Could you explain the difference between the two machines, please?

TOMLINS: Yes. The blood gas machine was more technical, it would take more readings. So we'd put a capillary tube in and it would take jaundice levels of a baby and oxygen, carbon dioxide, as well as blood glucose. And the BM machine, I think, was just a little handheld device that just measured blood glucose. So we must have discussed it with the doctors and decided that the blood gas machine was the more accurate of the two, so we were going to believe those readings.

ASTBURY: Right:

"We are taking value of BM machine" --

TOMLINS: Sorry, I didn't realise I'd written that.

ASTBURY: Is that looking forward or looking back?

TOMLINS: Um... I thought... I thought that that said, "We are taking value of blood gas machine", but I now see that says BM machine. That's a little confusing. I think that means we're taking the value of the handheld device rather than the blood gas machine. Sorry, I sort of skimmed the last thing and thought I read one thing and didn't.

ASTBURY: Not at all, I appreciate you're relying on the notes.

If we can go back, please, to the carousel. 242, thank you. We see here again, I suspect, simply confirmation of the second bolus that you described of 4.3. We've seen that before, thank you. I think we can move on.

Go to 246 next, please. Cefotaxime is what, please?

TOMLINS: It's an antibiotic.

ASTBURY: So that's simply an indicator that was administered as well. If we can go back to the carousel.

TOMLINS: Yes.

ASTBURY: Don't need to go into it, but at 10.54 there's an indication that you administered sodium chloride together with Ailsa Simpson.

If we go to 249 next, please. We can look again at the chart. I think this time the left-hand side, please. If we can zoom in on

the lower part of the form. Could we see the time of that at the top, please, Mr Murphy, is that possible? I'm interested in the entry that indicates "new line".

So alongside "major events" and with your initials below "New L line", is that?

TOMLINS: "New long line", I think.

ASTBURY: Yes. And does that feed into what -- the note that we looked at a few moments ago about the line tissing and having been replaced?

TOMLINS: Yes, that agrees with that, some time in the late morning.

ASTBURY: Right. If we go over to the right-hand side of the form, I think it's -- we're becoming familiar with there being two halves of the form, the fluid side of it. If we can look at the entry next to 11 o'clock on the left-hand side, where it says "TPN" and we have entries, three entries, indicating that those three sources of fluid that you've described to us were all off at 11 o'clock.

TOMLINS: Yes, that's right.

ASTBURY: Is that because, as you described to us before, all three would have been entering the long line in order to be administered to [Baby F]?

TOMLINS: Yes, that's what I think, because it was no longer working, we would have had to turn it off while he was having a new one inserted as well. So yes, I think they were all going into the long line and that's why they were all off because we didn't have anywhere else to give them while we were waiting for a new line, I don't think.

ASTBURY: Do you recall or not whether [Baby F] had any other point of intravenous access apart from a long line?

TOMLINS: No, I don't recall, sorry.

ASTBURY: Okay. I am just interested really with what happens to those fluids in the time that the long line is being replaced. On the face of it the baby is left with no fluids; is that right?

TOMLINS: Yes, for a short time they would be.

ASTBURY: If there was a peripheral line, what would you imagine -- well, do you remember, I think is the first

question -- sorry, do you remember what happened to the bags during the period or the various sources of liquid during the period [Baby F] was off the long line?

TOMLINS: No, I don't remember, sorry.

ASTBURY: Okay. If there had been a peripheral line, would that have been relevant to any or all of those fluids?

TOMLINS: Yes, I think we would have just -- because you can -- if a fluid bag has been going via a central route like a long line, it's safe to then move it over to a peripheral line, that's fine.

So if he had a cannula that was working, I imagine we would have just moved the fluids over and started infusing it via that route temporarily whilst we were putting a new long line in. But seeing as they say off, I think there was no other line.

ASTBURY: What connects, please, the TPN bag with the port, whether it be the long line or the peripheral line, to which the bag is connected to enter [Baby F] or any other baby for that matter?

TOMLINS: An infusion giving set. So sort of clear plastic tubing which is kind of spiky at one end and that's the part that goes into the bag and then just like a long, thin transparent tube, which would then lead to the port that goes into [Baby F].

ASTBURY: So there's a separate giving set that connects the bag with the appropriate port?

TOMLINS: Yes. Each one of the -- the dextrose and the lipid and the TPN would all have their own giving set that then link up to him.

ASTBURY: So if the TPN bag had been attached to a peripheral line, would the giving set have been changed or replaced?

TOMLINS: When moving -- if we moved from the long line to a peripheral line, would we have changed it?

ASTBURY: The giving set.

TOMLINS: Yes, I don't think we would have, no, because it's safe to go from central to peripheral. So I think we would have just moved it straight over and then changed everything with the new long line.

ASTBURY: Okay. So once the new long line is ready, we've heard that's an aseptic technique; is that right?

TOMLINS: Yes, that's right.

ASTBURY: And you've already told us that would be a doctor that fitted the new long line?

TOMLINS: Yes.

ASTBURY: Would it then be the nurse's responsibility to connect fluids to the new long line?

TOMLINS: I think so. It depends whether -- if the doctors were still scrubbed up in the sterile gowns, the baby was still under the sterile drapes, it might have been that we would draw up the fluids, we would get them all sorted and then they might connect whilst they were there because they're also wearing sterile gloves. But if that procedure's all finished then we would wear aseptic/sterile gloves and we would have connected it.

So I think it could be a nursing or a doctor job, whoever was there and sterile would do it. But I can't remember if it was me or not that day.

ASTBURY: So what fluids would be connected to the new long line?

TOMLINS: A new bag of TPN and a new syringe of lipid. And I suppose if we started the dextrose, it would have been a new bag of 10% dextrose as well.

ASTBURY: Is it always the practice to attach a new TPN bag?

TOMLINS: Attach it to what, sorry?

ASTBURY: So we have the new long line, you told us that the old TPN bag, if possible, would be connected to a peripheral line if it was available.

TOMLINS: Yes.

ASTBURY: Is it always that a new TPN bag is attached to the new long line?

TOMLINS: Yes, as far as I can remember, and in other places I've worked, you would make a whole new sterile -- new bags, new fluids, new lines and everything, just in case there was any infection in the last set. We would start all over again. So I'm pretty sure that it would have been a new bag that we attached to the new long line.

ASTBURY: That's what should have happened?

TOMLINS: Yes. I'm almost sure that that's the way we used to do it.

ASTBURY: Okay. Where would that new TPN bag have come from, please?

TOMLINS: I imagine the locked fridge on the neonatal unit. Yes, that's where we used to keep them.

ASTBURY: We've heard that the bag that was -- our understanding is that the bag that was hung for [Baby F] at the time that the long line tissue was specifically prescribed for him and prepared for him. Would it be possible to do the same at around midday when you go to the fridge, which you've described to us?

TOMLINS: Well, it would depend if he had any more bags made up specifically for him in there, but I imagine that we would have ran out because we wouldn't have anticipated that his long line would stop working and that he would need another bag. So I assume that we would have just attached one of our stock TPN bags and then ordered some more TPN for him if we needed more. That would probably come later in the day because it takes a few hours to come up from pharmacy.

ASTBURY: The bespoke bag that was prepared for [Baby F], how long would that ordinarily stay in place, had the long line not tissue?

TOMLINS: Um... I think they were 48 hours, either 24 or 48.

Different places I've worked have different guidelines and I can't remember which one Chester had, but one of those two numbers, I think.

ASTBURY: Okay, all right. What's the difference then with the stock bag from the fridge?

TOMLINS: I think it's just that the stock ones in the fridge don't have vitamins added, so the ones that the pharmacy make up, they would add vitamins in, so the TPN would be a different colour to our stock because once those vitamins are in the bag, the expiry date is a lot shorter. So we didn't store them like that because they didn't last very long. I can't remember if they made anything else tailored specifically to the babies or not, but I know definitely the vitamins were different.

They were added just by the pharmacy.

ASTBURY: And do you recall how many stock bags would be kept in the fridge?

TOMLINS: Not off the top of my head. Probably, I'd say, less than five, maybe five, but that's just a guess. It wouldn't be a large amount.

ASTBURY: You told us that the fridge was locked. Who had the key?

TOMLINS: It was usually the nurse in charge, but any one of us could go and ask for the bunch of keys and end up accidentally having them in our pocket for a while after. So it wasn't really strictly enforced that it was the nurse in charge, it was just usually they'd be on her.

ASTBURY: Was there any log or record kept of who would have the keys at any given time?

TOMLINS: No, I don't think so.

ASTBURY: Are you able to recall what else was kept in the fridge with the keys that would be passed in those circumstances?

TOMLINS: Yes. There were definitely syringes of premade morphine in there. There was intubation kits, so they were small amounts of premade drugs for when we intubated babies and I think they were suxamethonium, atropine and I can't remember the third, it might be fentanyl. So there were several of those kits made up. There might have been insulin in there, but I can't remember whether that needed to be refrigerated or not. And there was Curosurf, a lung medication, that was definitely kept in the fridge.

ASTBURY: As a matter of interest --

TOMLINS: Sorry, I was saying I can't remember what else.

ASTBURY: As a matter of interest, do you know where the insulin was kept if it wasn't kept in the fridge?

TOMLINS: It would have been -- there were cupboards in nursery 1 where the medications like antibiotics were kept that didn't need to be in the fridge and those cupboards were locked as well. So it was either in there or in the fridge. I don't think it was in the controlled drug cupboard, which is also in nursery 1.

ASTBURY: Okay. Not the controlled drug cupboard that you told us about, the other one, was the system similar with the keys to the fridge?

TOMLINS: It was just like a -- yeah, so the same bunch of keys.

As far as I can recall, the fridge was a padlock and the cupboards were just in-built locks into the cupboard.

ASTBURY: So same bunch of keys for both fridge and that particular cupboard.

TOMLINS: Yes.

ASTBURY: Going back to the TPN bags, if a stock TPN bag was fitted, would that have a new giving set or would that be the original giving set?

TOMLINS: A new giving set. If it's on a new line, a new giving set.

ASTBURY: Are you able -- bearing in mind you've recorded that the fluids went off at 11 o'clock, are you able to help us with how long it took before the long line was in place and the fluids were reconnected?

TOMLINS: I can't remember off the top of my head, but I remember, I read my statement, and fluids, I think, between when the fluids went off -- between 10 and 11 they got turned off. They got recommenced again before midday and I believe 8ml or so had gone through. I think the procedure was finished before midday but I can't recall exactly how long they were all off for.

ASTBURY: Okay. Well, let's have a look next, please, then at tile 261. Another form, Nurse Tomlins.

TOMLINS: Yes.

ASTBURY: If we look at the date in the first of the block entries, 5 August 2015.

TOMLINS: Yes.

ASTBURY: And we read across -- this is something we've seen before, we know it has the amount of Babiven, the amount of lipid, the total that you've already mentioned of 150ml that was anticipated, and then we have a rate of delivery in the next column for both respective fluids being administered intravenously. Then it looks like the same signature, Dr Ventress, having prescribed, and the date confirmed. Then are they your initials entered into those two boxes?

TOMLINS: Yes, they're mine.

ASTBURY: Does that suggest that you, perhaps with somebody else, started the new -- or hung, as we've sometimes called it, hung the new bag of TPN?

TOMLINS: Yes, it does, yes.

ASTBURY: All right. We can see the time that you'd have done that, 12 midday, on the 5th.

TOMLINS: Yes.

ASTBURY: You've written again in brackets "new long line".

TOMLINS: Yes.

ASTBURY: Then time and date finished, 5 August, again, 5 to 7 that evening.

TOMLINS: Yes.

ASTBURY: That's before you were off duty again for that shift.

Do you recognise the handwriting for that entry?

TOMLINS: The words "new long line"?

ASTBURY: I was actually meaning the time and date, but, yes, both, please.

TOMLINS: I don't think the time and date is my writing, but "new long line" is.

ASTBURY: Thank you.

MR JUSTICE GOSS: Sorry, can we just be clear about this?

The time and date, what, both columns, start and finish?

Can we just be clear?

MR ASTBURY: My Lord is enquiring whether 12 o'clock on 5 August is your handwriting or not.

TOMLINS: I don't think that is. So where it says "time and date started", the two columns underneath where it says 12 and then 5/8/15, I don't think that's my writing. And where it says "time and date finished", the day and then 18.55, I don't think that's my writing either. But "new long line" definitely is. That's my writing.

ASTBURY: Right, thank you.

TOMLINS: Hang on. Can I have a look? Now I'm not sure about that second 5/8/15. It's really hard to tell.

ASTBURY: Can we zoom in a little bit more, please?

TOMLINS: Sorry.

ASTBURY: (Overspeaking) in any event be too important but...

(Pause)

TOMLINS: Um...

ASTBURY: Well, if you can't say, please don't say.

TOMLINS: I'm not sure. On close inspection, the dates where it says 5/8/15, both of the columns under time and date started, they do look like mine when you zoom in close.

But the 12 o'clock doesn't, if that makes sense. It's a little confusing. Sorry about that.

ASTBURY: No, please don't apologise. If we can go now, please, to tile 256, and we go down, please, to -- sorry, it's my mistake. We can go back to the -- two tiles ahead, please, Mr Murphy?

MR JUSTICE GOSS: Sorry, which tile are we looking at now?

MR ASTBURY: It's tile 259, in fact, with the blood glucose level.

It's just really to confirm this, please, Nurse Tomlins: if we go to the right-hand side of the form and around about 12 o'clock, which is when just told us the long line went back on, if we can concentrate on that entry, please. Sorry, the right-hand side, Mr Murphy.

We've got 12 o'clock in the left-hand side. We've got the word "zeroed". Could you explain to us why you put that?

TOMLINS: Yes. I think we used to zero all the pumps at midday.

That means that we make sure we've recorded the volume that's gone in over the last 24 hours and then we just reset them all to zero, ready to start a new day. I'm not sure why it was at midday, but I think that's what that is.

ASTBURY: Okay. If we read across to the right, we can see that in the hour or so the line has not been connected on your

recollection, the sugars have in fact increased in [Baby F]'s blood to 2.4?

TOMLINS: Yes. I can see that.

ASTBURY: We can go to 258 next, please, Mr Murphy.

TOMLINS: Sorry, I'm not sure why they were zeroed because it actually looks like, looking at 1 am there, maybe the pumps were actually zeroed at midnight. I can't really remember. I'm not completely sure why that's been zeroed, just to clarify, I'm not certain why.

ASTBURY: All right.

TOMLINS: Sorry.

ASTBURY: It's okay. We know that a new bag was hung just after midnight on the same day and you have told us, I think, already that the rate was changed for the second bag.

So the volume of fluid that was to be received over the next 24 hours was reduced, was it, from 165 to 150?

TOMLINS: Yes. Maybe that's why, but -- yes. I can't be sure, I apologise, I don't remember more.

ASTBURY: I think you keep a running total of fluids, is that right, throughout the form?

TOMLINS: Yes. Every hour it's cumulative, we just keep adding to the previous hour to keep a tally.

ASTBURY: Presumably whoever takes over will need to check that that doesn't exceed 150 from that point onwards; is that right?

TOMLINS: What we would usually do is -- because the 1.5ml per kg per day, we would indicate what the hourly rate would be with their weight, so it wasn't that his limit of the day wasn't 150ml, it was 150ml per kilogram. So I don't know what his weight was, 1 point something, so we would calculate -- say if he was 1.5 kilograms, we would multiply that by the 150 and then divide by the 24 and then you'd have your hourly rate.

ASTBURY: Okay. Just scrolling down that page again, please, for the afternoon, just to have an overview of the afternoon once the new TPN bag had been hung, we can see there, can we, through the afternoon, reading down that column, they fell again to 1.9 up until about 6 pm?

TOMLINS: Yes, I can see that.

ASTBURY: If we can go back now, please, to 258. We can see the blood sugar levels fell again through the afternoon. By comparison can we look to the right-hand side, the top of the form, and the observations for the rest of the afternoon?

First of all, heart rate. We saw it before, but those are all entries with your initials at the bottom of the column?

TOMLINS: Yes.

ASTBURY: How would you describe that particular heart rate through the afternoon?

TOMLINS: So from about midday onwards, it's not in the yellow anymore, but there was a couple of -- I think it's midday and 3, it's sort of right on the cusp of being too high. But yes, definitely upper end of normal range all afternoon, slightly lower at 5 but still above 170, so quite tachycardic all day, really.

ASTBURY: Then if we look down at the next row, respirations. A similar picture at 3 and 4 o'clock of their being approaching the yellow area, of being in the high range?

TOMLINS: Yes, especially 3 o'clock, yes.

ASTBURY: Right. So could we go next, please, to -- someone pointed out, over to the right on respirations there seems to be -- is that a line through? Could you tell us, please, what that entry at 6 o'clock means to you?

TOMLINS: I think it says "Handled". So obviously, his resps had gone -- sorry, I'm looking at the heart rate. So his heart rate had gone right up to above 190 at 6. So I obviously thought it would be a good idea to write in brackets that he was being handled at the time, to give a bit of context as to maybe why it was suddenly higher again.

ASTBURY: Okay. Actually a little bit further down, as we scroll down, this entry here. I'll see if I can see what it says. Can you read that?

TOMLINS: Yes. That says "Error" for the resp rate. It looks like I wrote a value for the resp rate at about 40 and I've crossed that out and put error but then I haven't put a different value in. So maybe I didn't count it and just wrote that in error. I'm not sure what happened there.

ASTBURY: All right. Sorry, I was about to go to tile 263, please. This is a prescription for neonatal parenteral nutrition

or, as we've called it, TPN. You can confirm that's [Baby F]'s name at the top of the left-hand page?

TOMLINS: Yes.

ASTBURY: We can see it was prepared on 5 August for use on 5 August.

TOMLINS: Yes.

ASTBURY: If we scroll down, please, we can see that somebody has -- thank you. Just a little bit further, please.

Thank you. Somebody has marked on that it's for use commencing at 11.30 on 5 August 2015.

TOMLINS: Yes.

ASTBURY: You were telling us before that you assumed it was a stock bag because of the routine with prescribed TPN.

TOMLINS: Yes.

ASTBURY: Now, although it says 11.30 on the 5th -- if we go down, we can see on the left-hand side the time that the document was actually printed.

TOMLINS: Oh yes, 12.46.

ASTBURY: Then if we look to the right, we can see, I think, your initials again.

TOMLINS: Yes, that's my initials.

ASTBURY: Does that suggest that certainly the lipids, presumably, that would have accompanied this were started on 6 August 2015?

TOMLINS: Yes, 6 August, 12.30.

ASTBURY: So does that assist with your recollection of the process with prescribed TPN bags, when they would arrive as opposed to the use of stock bags from the fridge?

TOMLINS: Um... I'm not really sure because this is the next day, isn't it?

ASTBURY: It's actually -- it's printed on the afternoon of the 5th, so about 46 minutes after you've hung another bag.

TOMLINS: Yes. I'm just not sure why it's signed for the next day.

ASTBURY: In fairness to you, it says "lipid batch" near your signature.

TOMLINS: We used to record some number from the lipid syringe.

Obviously that's what that is there. But yeah, I'm not really sure why, if it was printed up on the 5th, we didn't give it on the 5th. I can't really say, sorry.

A little confusing.

ASTBURY: If we go back to -- let me just get the -- 261, please, tile 261, and we scroll down to the next day, day 9, 6 August. Do you recognise your signature again in the third column from the left?

TOMLINS: Yes, that's mine again.

ASTBURY: And that suggests Babiven and lipid provided at 12.40 on 6 August 15; is that right?

TOMLINS: Yes, that's right.

ASTBURY: That's the next entry after the 12 o'clock bag that we've already covered?

TOMLINS: Yes, that's right.

ASTBURY: So the prescription printed after the 12 o'clock entry on day 8 is endorsed with the addition of lipids and a time and date consistent with what we can see on that entry on day 9?

TOMLINS: Yes, both about midday or shortly after, yes.

ASTBURY: Thank you. I'm going to take you through the afternoon now and some of the entries that you made during the course of the afternoon. We can go first to tile 265, please. We don't need to go behind it. Thank you.

Yourself and [Nurse C] administering paracetamol just before 1 o'clock.

Next tile, please. Administering nystatin, again just before 1 o'clock in the afternoon. Any recollection of those administrations?

TOMLINS: No. I can't remember giving those, sorry.

ASTBURY: All right. If we could go next, please, to tile 274.

If we can look at the material behind that. Right-hand side again, please. There's an entry at 15.00 hours, Ms Tomlins, in which you've entered, as we go across, "Restarted".

TOMLINS: Yes. That means -- restarted is in the 10% dextrose column. Yes, it looks like we stopped the 10% dextrose for a few hours there and then restarted it at 3 o'clock-ish.

ASTBURY: Okay. I think we've already dealt with it, but we can see three entries down the right-hand side of 1.9 through the course of the afternoon.

TOMLINS: Yes. I imagine restarting the 10% dextrose would have been to try to treat that, I think, in addition to the boluses he was getting.

ASTBURY: Before we leave that we can see just an hour later, is that another bolus of dextrose?

TOMLINS: Yes. You mean in the 4 o'clock column?

ASTBURY: Yes.

TOMLINS: Yes. I think that says "10% dex", another 4.3ml.

ASTBURY: So more sugar at 4 o'clock?

TOMLINS: Yes.

ASTBURY: Tile 277 next, please. This is a result, as I understand it, of a blood test that was carried out that afternoon and we can see that next, on the right-hand side, "Order", it says "doctor" but it's your name, Shelley Tomlins.

TOMLINS: Yes. That's my name.

ASTBURY: We can see there, perhaps because of what you told us about the two machines, there's a sample of blood examined for glucose, and if we read down, please.

TOMLINS: Do you want me to read out the result?

ASTBURY: That says 1.3. What can you tell us about 1.3, please?

TOMLINS: That that's very low and even lower than the readings we were getting on the ward.

ASTBURY: That's telephoned through at 15.30 on the afternoon of 5 August. That's just in between those two boluses at 3 and 4 o'clock that we've just looked at on the fluid chart.

TOMLINS: Yes.

ASTBURY: Thank you. Go next to 278, please, just the tile.

We can see again, without going behind the tiles, the administration of that dextrose through the afternoon at 278 and 279.

Then if we can look at your note behind 280. As we did before, we can see there that this is headed "Family communication" and we can see the note was made between 15.43 and 15.45 that afternoon; would you agree?

TOMLINS: Yes.

ASTBURY: It's to reflect the whole day as far as, I think, family communication is concerned, 8 to present; is that right?

TOMLINS: Yes, that's all day.

ASTBURY: I can read it if necessary:

"Mum and dad present by cot side throughout most of today."

Do you recall that now?

TOMLINS: Not -- I remember the parents, but I don't really remember them on this specific shift particularly.

Maybe vaguely, but I'm never too sure whether it's a real memory or whether I'm getting it from the notes.

ASTBURY: This note was written at the time so we'll stick to the note:

"Mum still has not been to bed for sleep."

Is that right?

TOMLINS: Yes.

ASTBURY: "Parents fully up to date with plan of care. Have been updated on [Baby F]'s progress."

By yourself, Dr Saladi and Dr Ventress?

TOMLINS: Yes.

ASTBURY: And then you mention that mum and dad had been to the registrar of births and, sadly, deaths that afternoon and that they were in a more positive mood but still very shocked.

TOMLINS: Yes.

ASTBURY: If we can come out of that tile, please.

290, next, please. If we can see the whole of that note, is that your signature on the right?

TOMLINS: Yes, it is.

ASTBURY: As opposed to the Meditech notes, this is a note you've made on the doctor's clinical notes. Is that something that you would do from time to time?

TOMLINS: I think we wrote it in -- because this is a urinalysis, like a urine dipstick test, and I think we would just write it straight in these handwritten notes so they could be easily referred to by anyone, I think, from what I can remember.

ASTBURY: Okay. Move on, please, to tile 295. If we can look, please, on the right-hand side, the sugar entry for 6 o'clock that evening, 18.00 hours.

TOMLINS: I think it's 1.9, but it's a little bit small. I think it says 1.9. It's just a bit fuzzy.

ASTBURY: I think you're right. We're going to enlarge it for you.

TOMLINS: Yes. 1.9.

ASTBURY: We'll deal with the remainder of these values while we have it open. If we can just scroll down a little bit further, please, to the bottom part of the form.

We can see the entry at 6 o'clock is 1.9. If we read across from 7 o'clock, it looks like it's increased a little to 2.5.

TOMLINS: Yes.

ASTBURY: Would you agree?

TOMLINS: Yes. It's slightly -- sorry. I was going to say it's slightly obscured by the J3204 printed over the top of it, but I think it's 2.5.

ASTBURY: I was wondering if we could just go to the left to see what the handwritten note for 7 o'clock is, please.

TOMLINS: "15% dex and sodium chloride", I think.

ASTBURY: If we look at the rest of the row, please, and tell us what that means and just check it's your initials next to it before we go any further. So we can see that in fact that's the last entry at 7 o'clock you make. Are you able to explain that note to us?

TOMLINS: So the 15% dex and sodium chloride to the left, I don't think that's my writing. But it looks like...

ASTBURY: Well, if it's not yours, that's I think all we can ask.

TOMLINS: I don't think it is. The numbers on the columns are mine, like the readings, but I don't think the writing is.

ASTBURY: Okay. We have nearly finished your entries on this particular day, thank you. If we can go next, please, to tiles 307 and 308, but we don't need to go behind them. We can see there, can we, the administration of antibiotics and, again, sodium chloride --

TOMLINS: Yes.

ASTBURY: -- in which you took part?

309 next, please. If we can look at that. Just to confirm for the timeline, we've covered this already, but we can see that the bag that was hung at midday was in fact finished at 18.55 that evening before you went off duty?

TOMLINS: Yes.

ASTBURY: 311, please, is the next tile. This is the 7 o'clock entry, so just after that bag has been finished.

A slight increase in the blood sugar level; is that right?

TOMLINS: Yes, that does look like what's happened.

ASTBURY: If we can go next, not behind the tiles, to 313 and 314.

We can see some more medications in which you were involved at 7 o'clock and then at 7.17, dextrose and nystatin respectively.

TOMLINS: Yes.

ASTBURY: I think your final note on the nursing notes, please, the next tile, 315. I am looking at the note you made presumably before you went off duty from your day shift.

TOMLINS: Yes.

ASTBURY: "Persistent hypoglycaemia," hypo being low blood sugar?

TOMLINS: Yes.

ASTBURY: "Therefore after discussion with Dr Jayaram, [Baby F] now changed from TPN, lipid and dextrose to just dextrose with NaCl added."

TOMLINS: Yes.

ASTBURY: And then:

"New fluids commenced around 7 o'clock this evening."

7 o'clock being the time we saw that entry to the left-hand side of the fluid chart?

TOMLINS: Yes.

ASTBURY: And then you note that bloods had been taken via a venous sample and sent to the laboratory.

TOMLINS: Yes.

ASTBURY: Then a little later, 8.05 that evening, blood sugar is 2.5 at 7.30 pm on the BM machine and:

"Urinalysis done with cares at 5 o'clock."

That's the note on the doctor's notes that we saw.

TOMLINS: Yes.

ASTBURY: "Results normal and urinary sodium sent to lab."

TOMLINS: Yes.

ASTBURY: That was the end of your involvement with [Baby F], including 4 and 5 August 2015.

Having looked at your notes and the entries on the observation charts and the fluid chart, can I ask you this, please: did you at any point in time administer insulin to [Baby F]?

TOMLINS: No.

MR ASTBURY: Thank you.

MR JUSTICE GOSS: How long are you likely to be?

MR MYERS: About an hour or so, my Lord.

MR JUSTICE GOSS: Oh right. Well, we've done an hour and a half this afternoon (sic).

MR MYERS: Yes, we have, so far.

MR JUSTICE GOSS: Do you want a break or do you want to do 40 minutes and break for lunch?

(Pause)

Cross-examination by MR MYERS

MR MYERS: Ms Tomlins, can I check that you can see and hear me clearly?

TOMLINS: Yes, I can, both see and hear.

MYERS: Thank you. I'm going to go over the same sort of area you've been asked questions about. There's just two initial matters I'd like to ask you, just general points.

The first is this is. You were shown some entries on the observation chart and the care chart for 4 August --

TOMLINS: Yes.

MYERS: -- early in your evidence. And we saw your signature on those two charts, one on each of them, within [Nurse B]'s signature. Do you remember that?

TOMLINS: I don't remember doing it, but I do remember working that day.

MYERS: Right. And do you remember seeing that on the charts when they were shown to you? Do you remember that?

TOMLINS: Earlier today or...?

MYERS: Yes, earlier today?

TOMLINS: Yes, I remember, yes.

MYERS: We know that [Nurse B] was designated as [Baby F]'s nurse on that day. But there's nothing unusual at all, is there, in a

nurse such as you helping out and then signing the records for where you've done that? Do you agree?

TOMLINS: Yes, I agree, there's nothing unusual in that.

MYERS: The other just general matter I'd like to confirm with you is some of the entries that we see when we look at the computerised prescription forms. I'm going to ask if we could put up on the screens slide 219. Could we scroll down that, please, to the bottom part?

You might remember, Ms Tomlins, that earlier on this morning, you were shown this and asked a little bit about what the entries mean. Do you remember that?

TOMLINS: Yes. I'm just going to quickly remind myself if that's all right. I'm going to read it again.

(Pause)

Yes. Okay. I've read it. Thanks.

MYERS: Thank you. As I recall, the suggestion or the way the questioning went was that where we see your name under "user", that indicated that you had administered the dose and [Nurse C] was simply the co-signer. Do you remember that was what you were being asked?

TOMLINS: I do remember that. As the user, I'm logged in and it's under my account, but sometimes the co-signer could be the one who technically administers the medication.

It would be one of the two of us, it wasn't really strictly enforced that it would be the user.

MYERS: That's exactly what I wanted to confirm with you, the user simply means that you were the one who is signed on to the system, you can't tell who has administered it just by looking at this, can you?

TOMLINS: No, you can't.

MYERS: Thank you. We can take that down now, please. Thanks, Mr Murphy.

I'm going to ask you a bit next about the types of TPN bags that you had, as well as you can remember this back in 2015. So I'm going to ask you some questions about this.

I'm going to ask you whether there were in effect three kinds of TPN bag. Can I explain what I mean and then you can say if this is right. It's probably easier if I do it this way round.

First of all, you would have what are called Start-up bags that could be used during the first 2 days of life; is that correct?

TOMLINS: Yes, that's how I remember it too. I didn't remember that it was 2 days, but I remember Start-up bags.

MYERS: Let me go through the type of bags and then I'll have some more questions. You also had what were called Maintenance bags, which could be used after the first 2 days and they had more sodium in them than the Start-up bags.

TOMLINS: Yes, I remember that.

MYERS: And then you would also have what were in effect prescribed bags of TPN, those are the bags that have been made up for a particular baby by the pharmacy?

TOMLINS: Yes.

MYERS: All right. And all of these bags were kept in the fridge that you've described to us, the locked TPN fridge; is that correct?

TOMLINS: That's correct, yes.

MYERS: So far as the Start-up bags were concerned and the Maintenance bags, they were available to be used for whatever baby you needed to use them for if the need arose; is that correct?

TOMLINS: Yes, that's correct.

MYERS: Right. By contrast, the prescribed TPN bag would be for a particular baby?

TOMLINS: Yes.

MYERS: So far as the Start-up bags and the Maintenance bags are concerned, did you have a stock of them in the fridge ready to use if required?

TOMLINS: Yes, we did.

MYERS: Back in 2015, would there be about five of each of those, so five Start-ups and five Maintenance bags?

TOMLINS: Something like that. I can't remember. I had five in my head too, so about that number.

MYERS: I suppose what I'm suggesting is that if there's five Start-up bags and five Maintenance bags, that would be about 10 of those together.

TOMLINS: Roughly, yes.

MYERS: Was it the case that if one of them was used or a number of them were used, then more would have to be brought up to replace them?

TOMLINS: Yes.

MYERS: With the prescribed TPN bag, we know that's for a particular baby, would the doctor have written out the prescription for what that baby needs and that prescription is then sent to the pharmacy, who make the bag up?

TOMLINS: I think so, yes. As far as I can remember.

MYERS: You were asked some questions that touched on the question of when a bag like that might come to the neonatal unit, when it might arrive having been made up.

TOMLINS: Yes.

MYERS: Would bags that were made up usually arrive round about 4 pm on the day they were prescribed? If you can't remember any of these, do say, but I'm asking, is it about 4 or 5 pm they'd come to the neonatal unit?

TOMLINS: Yes, I think that's what happened. Late afternoon.

MYERS: Yes. So those are the kind of bags that you had. And you have told us about the fridge. They were kept in a locked fridge; is that correct?

TOMLINS: Yes.

MYERS: And in theory, the key, this is in theory first of all, the keys would be with the shift leader, whoever the nurse in charge of the shift was; is that right?

TOMLINS: Yes, most of the time they'd be with her, yes.

MYERS: But I think you touched on this, did it sometimes happen that the keys might happen to be with whoever the last person was who'd used them to go into the fridge?

TOMLINS: Yes.

MYERS: So did that mean that if you didn't already have the keys, you'd have to ask around to find who had got them and then use the keys, having told someone you wanted to go to the fridge?

TOMLINS: Yes. We just used to say, who's got the keys. You wouldn't even necessarily say where you were going with them. It would be the fridge or the cupboard.

MYERS: You told us about some of the other items that were kept in that fridge and one of the items you referred to were what you call premade intubation kits. Do you remember telling us about that?

TOMLINS: Yes.

MYERS: I just want to ask you about that. We know that when or if a baby had to be intubated for ventilation, usually there would be some medication that might be given to the baby to assist with that.

TOMLINS: Yes.

MYERS: Is that what you were referring to?

TOMLINS: That's what I was referring to, yes.

MYERS: When you said premade does that mean that you actually had medication that was to be used for intubation that was ready made and kept in the fridge ready to go?

TOMLINS: Yes.

MYERS: So that meant, didn't it, that if there was any urgency and you needed to get on with intubation quickly, the drugs were ready and you could get on with it?

TOMLINS: Yes.

MYERS: I'm going to ask you next about just in general what happens when a TPN bag is put up. This is in general, this isn't about any particular time. We'll come to that in a bit. Usually, would there be two nurses involved in setting up a TPN bag?

TOMLINS: Um... There'd certainly be two nurses checking, but I don't know whether there would be two present when it's drawn up physically, unless one needed to hold the bag high while the other one was sterile. I don't know if there would always be two people present.

MYERS: All right. I'm assuming obviously the bag has to be taken from the fridge that's going to be used; that's the first step?

TOMLINS: Yes.

MYERS: And then if it's a prescribed bag, if it's meant to be the prescription bag, will the nurse who does that check they've got the right bag with the baby and sign on the prescription paperwork?

TOMLINS: Yes, they'll do that.

MYERS: And then to actually use the bag, it's hung with what's called a giving set, which is the tubes that come down from it, down towards where it connects to the baby; is that right?

TOMLINS: That's right, yes.

MYERS: We've seen from the paperwork, and we're going to look at it with you shortly again, but sometimes there might be a number of different fluids that are running into the baby for nutrition; is that right?

TOMLINS: That's right.

MYERS: They may include the TPN, and they may include lipid and they may include dextrose; do you agree?

TOMLINS: Yes.

MYERS: Is it the case that each one of those will come from its starting point on a separate line and meet on one line that will go into the baby?

TOMLINS: Yes.

MYERS: So for instance, if you have got TPN up, that would be hanging up and the TPN will travel up through the giving set to whatever the point of entry is?

TOMLINS: Yes.

MYERS: Lipid is normally delivered via a syringe driver, isn't it?

TOMLINS: Yes.

MYERS: That would be a different line from the syringe driver into whichever line you're using for the baby; is that correct?

TOMLINS: That's right, yes.

MYERS: All right. And then if there is dextrose running in, that will be coming from another bag and line and it will join the other two?

TOMLINS: Yes, that's right.

MYERS: So if, as you were doing on [Baby F], there's a long line that's being used to carry everything into the baby, will those three different feeds or elements of the feed meet at one point by a three-way set or by different little caps and they will enter into the long line that way?

TOMLINS: Yes, I believe so. I forgot when -- I just remembered, some long lines have more than one lumen, which is like -- it's the same line but I suppose it's like the centre of it is kind of divided into two, if you like.

I don't know what kind of long line he had, but at some point all of those three fluids would join --

MYERS: Yes, thank you.

TOMLINS: -- to clarify.

MYERS: Generally speaking, a TPN bag, once put up, I know it's a little difficult to remember this, but I'm going to suggest it would be expected to last for up to 48 hours.

You said 24 or 48. I'm suggesting it was 48 hours.

Can you recall which of those it was?

TOMLINS: Not off the top of my head. I've worked in a few different places with different guidelines, so I can't remember which one Chester was.

MYERS: As a general rule, if the bag ran without any mishap and without any need to change it, it would change -- round about midnight would be the time to change a TPN bag?

TOMLINS: Yes, that's right.

MYERS: Thank you. When it comes to changing the TPN bag it's not just the bag that is changed but also the line -- the giving set that leads into the line (inaudible: coughing) giving set?

TOMLINS: I can't remember how often we had to change the lines in Chester. I can't remember if it was every single time we

changed a bag or if it was only every 96 hours, for example. I can't comment on what Chester's policy is.

MYERS: But certainly if we look at it the other way round, if you change the long line then, so far as you can recall, you would also change the TPN bag to make sure the risk of infection was reduced?

TOMLINS: Yes, as far as I can recall, you definitely had to do that.

MYERS: Again, in general practice, if a long line tissues, I'm going to ask you about that, you can't use that line anymore, can you?

TOMLINS: No.

MYERS: So, so far as TPN is concerned, would you turn off the TPN bag and then remove the line for it to be replaced?

TOMLINS: Yes.

MYERS: And then, as you have said, once the long line is replaced, a new TPN bag is hung and used?

TOMLINS: Yes.

MYERS: And whatever contents were left of the old TPN bag get thrown away in the sluice?

TOMLINS: I think they were just put in the bin, from my recollection.

MYERS: Thank you. Having dealt with those general matters, I'd just like to have a look at some of the paperwork that we've got from you, Ms Tomlins, if you could help, for 5 August, so the shift that you were working.

TOMLINS: Okay.

MYERS: Would it be fair to say that, without the paperwork, you really don't have any independent memory of just what took place?

TOMLINS: Yes, that's completely true.

MYERS: No one is going to criticise you for that, it'd be quite a feat to remember the details after 7 years. So I'm going to ask about what we can actually see and what the paperwork means. I'm not going to ask you to have a guess about what may or may not have been happening beyond that.

TOMLINS: Okay.

MYERS: The first thing I'm going to ask you to look at with us, please, is the notes that you made at our slide 251, please, Mr Murphy.

It's a note you made at 12.50 pm. And then we're going to look at what lies behind it. I'm going to ask Mr Murphy to enlarge the second entry down so you can see it, Ms Tomlins.

TOMLINS: Okay.

MYERS: I'm not going to go through all of it, just the parts I need to deal with this. What you have said is:

"BM around 30 minutes after first bolus was 1.4."

That's the blood glucose?

TOMLINS: Yes.

MYERS: We can see, again I reiterate, this is 12.50, the note is, on 5 August, so it's describing events that have taken place:

"BM around 30 minutes after first bolus was 1.4, therefore further 3ml/kg 10% dextrose bolus administered over 15 minutes. Long line noted in the meantime by doctors on ward round to be tissue, with puffiness evident on the upper right leg. Fluids immediately stopped via this route. New long line sited into left leg with aseptic technique, X-ray confirmed, and new fluids of TPN and lipid now infusing via new long line."

So you see that, Ms Tomlins?

TOMLINS: Yes.

MYERS: I'm just going to ask you some questions now about what comes from that and look at the paperwork that goes with that.

Just before we move from the note, this refers to the fact that where the long line entered [Baby F], it had tissue; is that correct?

TOMLINS: Yes. So I'm not -- I think the tissue part would be the tip of the long line, so the part that was further into his body would be the part that's tissue.

MYERS: All right. It confirms that a new long line was put in, wasn't it, aseptically?

TOMLINS: Yes.

MYERS: And it confirms also, that having been done, that new fluids of TPN and new lipid were put up or lipid were put up?

TOMLINS: Yes. That does confirm that.

MYERS: Yes. So that fits with what you've described to us about a new TPN bag being used if a long line is changed, doesn't it?

TOMLINS: It does, yes.

MYERS: We can take that down and just to see where that note now relates to what we've seen on other documents, could we put up slide 249, please. It's J3204.

We've seen that note was made retrospectively, a little bit before 1 pm. It referred to what had happened. If we look on the right-hand side and enlarge the entry for 11 o'clock, please, this leads up to the note. There we go, thank you.

Can you see on the left-hand side it's got 11 o'clock and it says "off" under "TPN, lipid and dextrose", doesn't it?

TOMLINS: That's right, yes.

MYERS: That refers to the process, first of all, of switching this or clamping this off because it had tissued and because it was going to be necessary to change the long line; is that right?

TOMLINS: Yes, that's right.

MYERS: So far as we can tell from this paperwork, and from what you have put, there's no suggestion to any peripheral line being used for anything in fact, is there?

TOMLINS: No, I couldn't find any evidence of that.

MYERS: And indeed, if the chart that indicates input, which we're looking at here now, has "off" across "TPN, lipid and dextrose", that would suggest that nothing was being input, nothing was going in at that time, wouldn't it?

TOMLINS: It would, yes.

MYERS: Can I just ask this -- this is something general, though it bears upon this. Let me just ask this: would it be the case that you wouldn't run TPN or lipid via a peripheral line anyway? You may run dextrose, but not TPN or lipid?

TOMLINS: You can do, but I'm not sure -- I think maybe each hospital is different. I've worked in places where you can, but I can't remember if we were allowed to at Chester.

MYERS: All right, thank you. But in any event, the best record we have is what you've put in this note, which says "off", in fact, for all of those items at 11 o'clock?

TOMLINS: Yes.

MYERS: Thank you. If we then look to what follows from that entry, if we look at the TPN chart at slide 261, please, Mr Murphy, which is page 3144.

If we look now at the top entry, can you see day 8, Ms Tomlins, 5 August 2015?

TOMLINS: Yes.

MYERS: We're looking at that entry. We know that where we're talking about TPN, that's the entry under "fluid" for "Babiven Maintenance, Solivito and Peditrace", isn't it?

TOMLINS: Yes.

MYERS: Just working across, where it says "prescribed by", is that, so far as you can tell, the signature for Dr Alison Ventress?

TOMLINS: I think so, yes. I can't remember her signature, but I saw some notes written by her for the same day, so I believe it is her.

MYERS: The date next to that is 5 August 2015 and then we've got "given by" and is that your signature, the SAT, with the L?

TOMLINS: Yes.

MYERS: And underneath that there's an A. Do you know who that is or was?

TOMLINS: No, I don't, sorry.

MYERS: All right. You found it a little difficult, I don't say it critically, it's a long time ago, to decipher what you did or didn't write in the next two columns, didn't you?

TOMLINS: Yes, I did, I'm afraid.

MYERS: But looking at what we can see is recorded, it refers to the time and date started, that's referring to the TPN on the first line, isn't it?

TOMLINS: Yes.

MYERS: And certainly "new long line" refers to the new long line that had had to be put in because the old one had tissued?

TOMLINS: Yes, that's what that refers to.

MYERS: Certainly we've seen on the chart where it records fluids being turned off for 11 o'clock, there is a time here of 12 o'clock for "time and date started" for this fluid, for this TPN, isn't there?

TOMLINS: Yes.

MYERS: Similarly, if we look at the next line down for the lipid, that also has a time/date start of 12 o'clock, it looks like, on 5 August 2015, hasn't it?

TOMLINS: Yes.

MYERS: And your best recollection, or rather your understanding of the practice that would have been followed, is that, as you put in the note, if a new long line has been put up then the new TPN bag has been hung?

TOMLINS: Yes.

MYERS: We can take that down for the time being, Mr Murphy, although we may be returning to it.

Again, following your understanding of how this would have had to be done, to use TPN at this time you would have used one of the stock bags from the TPN fridge, wouldn't you?

TOMLINS: I believe so if we hadn't have -- if we didn't have any that was specifically prescribed for [Baby F], we would have just taken some from stock.

MYERS: Yes. The stock bags were available to be used for any baby who needs a stock bag to be used, isn't it?

TOMLINS: Yes.

MYERS: Really, the reason why you would have had to use a stock bag is that the line tissing is something that wasn't predicted and therefore you had to use what was available at that point? That's how that worked, isn't it?

TOMLINS: Exactly, yes.

MYERS: Yes. Just moving forwards -- sorry about moving across the paperwork, but I'm assisting, if I can, by going through it as chronologically as possible with this. If we go back to the chart, the intensive care chart, I'm just going to ask you about the zero that you put in there. That was at slide 249, Mr Murphy. Page 3204 for people using J numbers.

Can we just go to 12 o'clock, please, about halfway down. Thank you. Perhaps just enlarge the line for 12 o'clock and the lines either side of that, so Ms Tomlins can see it clearly.

Can you see that clearly, Ms Tomlins?

TOMLINS: Yes, pretty much. It's a tiny little bit fuzzy, but I can make it out, yes.

MYERS: We'll see how we get on. We've looked at 11 o'clock when everything is turned off. We've looked at the note on the TPN prescription, the note which has got the signatures for when the long line was inserted and the TPN and the lipids started again?

TOMLINS: Yes.

MYERS: Can you see -- here we see the TPN and lipid starting again at 12 o'clock, don't we?

TOMLINS: Yes. We do, yes.

MYERS: We do. So that would be consistent with the timing roughly we see on the TPN prescription for where it's signed?

TOMLINS: Yes.

MYERS: By you and someone with a letter A?

TOMLINS: Yes.

MYERS: So far as zeroing is concerned, what I'm going to suggest, and you can help us with, is that the pumps were zeroed, as a rule, at midnight, but also they were zeroed if a new long line was put in, which is why you've put "zeroed" at 12 o'clock because the new long line has been put in. Could you help us with that?

TOMLINS: I can't remember. I... I think we also -- I also think, sorry, that we had to zero them at midnight, but I can't remember whether there were specific guidelines for if it was a new long line.

MYERS: Right.

TOMLINS: I'm not too sure why I have zeroed. Maybe that was why, but I'm not too sure.

MYERS: All right. Well, I agree with you, with what you say about zeroing at midnight. Certainly 12 o'clock, where you have put zeroed, that would have followed not long after the new long line had been put in, wouldn't it?

TOMLINS: Yes, I believe so.

MYERS: Thank you. I'm just going to ask if we can pull out, so we can see the bottom half of this chart again in a bit more -- a bit more completely. I'll ask Mr Murphy for that, if we can see the bottom half of this fluid balance chart. Thank you.

Just looking at the timings and also at the blood glucose recordings now, Ms Tomlins, can we see at 12.00, which is where you've zeroed, that would follow a period when [Baby F] had been -- the fluids had been stopped and in fact blood glucose has risen to 2.4, hasn't it, at that point?

TOMLINS: Yes.

MYERS: But if we then follow what happens after they've been started and the new bag of TPN has been hung, if we look at 14.00, it's dropped, hasn't it, down to 1.9?

TOMLINS: Yes.

MYERS: The next reading in that vein at 16.00, again is still low at 1.9, isn't it?

TOMLINS: Yes.

MYERS: As we come up to 18.00, it remains low at 1.9, doesn't it?

TOMLINS: Yes.

MYERS: To have a little explanation for what happens at 19.00 and 20.00, I'm going to come back to this chart, but to get some explanation can we look at the note you made retrospectively at slide 251? So we're going to come out of this, look at your note at 251 and come back.

If we go to the penultimate entry on the right-hand side, please, Mr Murphy. Just down below that as well, please, thank you.

I'm actually going to ask you to have a look, Ms Tomlins, with us, if you would, at the addendum note for 19.25 that day. Can you see that?

TOMLINS: Yes. I can see it.

MYERS: All right. It says:

"Persistent hypoglycaemia [that's low blood sugar] therefore, after discussion with Dr Jayaram, [Baby F] now changed from TPN/lipid and 10% dextrose to just 15% dextrose with NaCl."

NaCl is sodium chloride, isn't it, which is salt?

TOMLINS: Yes.

MYERS: "New fluids commenced around 19.00 this evening. Bloods taken via venous sample and sent to laboratory."

So that's your note of what has happened, that the TPN, lipid and 10% dextrose is just changed to just 15% dextrose with sodium chloride; yes?

TOMLINS: Yes. At around 7 o'clock.

MYERS: All right. So just having seen that explanation, and with Mr Murphy's assistance, could we go back to that chart now and look at the remaining entries? If we go to slide 249, which is J3204.

Just enlarge the lower part of the bottom half of the chart or thereabouts, Mr Murphy, if you would, please.

So we'd seen in your note that you said that around 7 o'clock new fluids were commenced having changed from TPN, lipid and 10% dextrose to just 15%. If we look at 19.00, can you see now it says -- does that say -- does that look -- does that appear to be "15% dex plus NaCl"

in the left hand margin?

TOMLINS: Yes. That's what I think it says, yes.

MYERS: Yes. Which would accord with your note that 15% dextrose plus NaCl was now being used instead of the TPN, lipid and dextrose that had been used before, doesn't it?

TOMLINS: Yes.

MYERS: So we see that at 19.00. At 20.00, in fact, it says "stopped" under each of TPN, lipid and the dextrose that had been running, doesn't it?

TOMLINS: Yes.

MYERS: Yes. If we look at 21.00 now, so 9 o'clock in the evening, the blood glucose has risen, hasn't it?

TOMLINS: Yes, 4.1.

MYERS: 4.1. So it would appear that once that second bag of TPN had been stopped and the lipid and the dextrose that had been part of that fluid, and once 15% dextrose was run independently of them, the blood glucose rose?

TOMLINS: Yes, it did.

MR JUSTICE GOSS: Mr Myers, may I just ask one question?

The writing "15% dex plus NaCl", do you recognise that as your handwriting?

TOMLINS: Me? No, I don't think that's my writing.

MR JUSTICE GOSS: Right.

MR MYERS: You said that in your evidence earlier, I think.

MR JUSTICE GOSS: I know, I just wanted to have it confirmed while we're going over all this again.

MR MYERS: That's certainly what you refer to in your note, isn't it, Ms Tomlins, at 19.25, as to those items being stopped and 15% dextrose with sodium chloride now being added?

Then could we just finally have a look at the TPN prescription, slide 261. J3144. We've seen -- we've got the top line there that I'm interested in, Ms Tomlins. We've seen in your note how the TPN and lipid were to be stopped and in place 15% dextrose would be run. You recall that from your note, don't you, Ms Tomlins?

TOMLINS: Yes.

MYERS: And we've seen on the intensive care chart where that certainly appears to reflect what we see on there round about 19.00, 18.00 and 19.00; is that correct?

TOMLINS: Yes, that's correct.

MYERS: Then finally, looking at this, the top line for that TPN bag, we've got the final time and date finished. It says "5 August 2015 at 18.55", doesn't it?

TOMLINS: Yes.

MYERS: So whoever's writing that is, that's actually consistent with what you put in your note for it stopping at 7 pm, isn't it?

TOMLINS: It is, yes.

MYERS: Yes, all right. Thank you.

MR JUSTICE GOSS: Thank you very much.

MR ASTBURY: Just one matter, my Lord, arising.

MR JUSTICE GOSS: Certainly.

Re-examination by MR ASTBURY

MR ASTBURY: Just one more matter, please, Ms Tomlins from me. You were asked about the keys and the bunch of keys that were kept in the unit. You told us that the key for the fridge was on the same bunch as the key for the cupboard; is that right?

TOMLINS: Yes, as far as I can remember they were all on together.

ASTBURY: Okay. And you also spoke of a locked cupboard for controlled drugs. Would that key have been on the same bunch?

TOMLINS: Yes. As far as I can remember, it was all the same bunch.

ASTBURY: Thank you. The cupboard for the controlled drugs, was that -- was a log kept of the contents and the access to that particular cupboard?

TOMLINS: A log kept of the contents? We counted them up every day on a night shift with two of us, but not -- I don't think there was a log kept of access.

ASTBURY: But no log kept of what was in the fridge or the other cupboard, if I can put it that way?

TOMLINS: So the other cupboard in nursery 1 that had antibiotics and things in it, as far as I can remember there was no log of

that one. But some of the medications in the fridge were logged -- like the morphine, that had to be signed out by two people.

ASTBURY: Right. But all three keys on the same bunch and in the possession of the same individual, whoever that might have been at the time?

TOMLINS: Yes, I think so.

MR ASTBURY: Thank you.

Does my Lord have anything arising out of that?

MR JUSTICE GOSS: I just want to be clear of what had to be signed out for and what didn't. In other words whether there was a record of --

MR ASTBURY: That is what I was -- if I have not understood properly, I apologise.

So a log kept of what was in the cupboard with the controlled drugs in, is that right?

TOMLINS: Yes. There was a controlled drug book with -- like every day we would count the amount of vials of morphine and... I can't remember what else was in that cupboard.

That had to be co-signed with two people.

ASTBURY: Okay.

TOMLINS: But in the fridge some of the contents didn't need to be monitored like that, but some of them did. Definitely morphine in the fridge had to also be co-signed by two of us.

ASTBURY: Okay. Was a log kept -- because morphine is a controlled drug; is that right?

TOMLINS: Yes, that's right.

ASTBURY: So a log kept of morphine on the same basis that a log was kept of what was in the cupboard and not refrigerated?

TOMLINS: Yes. I think it wasn't in the same book as the cupboard morphine vials were. I think it was a separate record, it might have just been paper, just pieces of paper.

I can't quite remember because I didn't do that one as often. But yeah, it was -- definitely a log was kept of it.

ASTBURY: All right. Just to confirm, TPN bags, Babiven bags, not controlled?

TOMLINS: Not controlled, no.

ASTBURY: No log kept of where or how many of those were in the fridge at any given time?

TOMLINS: I think we -- every night shift somebody would need to count up how many of everything we had left in the fridge, like TPN and lipid, and then if we were missing any, if we'd used any, we would then order more. So it was monitored but not so much by two people, just one person's job would be to keep an eye on the levels of stock for TPN and lipid.

ASTBURY: Right. And likewise, insulin not a controlled drug?

TOMLINS: No, I don't think so.

ASTBURY: Was it the same approach to insulin as it was to the TPN bags that someone would just keep an eye on the stock and ask for more if it was running low?

TOMLINS: I think so, yes.

MR JUSTICE GOSS: Right, thank you.

MR ASTBURY: Thank you, Ms Tomlins.

TOMLINS: You're welcome.

MR JUSTICE GOSS: That completes your evidence. Thank you very much for making yourself available to give it.

You are not required to give evidence again --

MR ASTBURY: I think on the table, yes, for a later baby.

On the table I have.

MR JUSTICE GOSS: Oh right, so you are required again.

Sorry, I must have misread across the chart. So you will be notified and an arrangement will be made similar to the one that's been made for today for you to attend again. I know you are on the other side of the world, but don't speak to anyone by any means, because of course we've been communicating with you as if you were in the next room.

TOMLINS: Fair enough.

MR JUSTICE GOSS: Don't communicate with anyone in any way about anything to do with this case until it's completed, please. Thank you very much indeed.

TOMLINS: All right, thank you.

MR JUSTICE GOSS: Right, I'm sorry that was one long session without a break, members of the jury, but we'll break off now until 2.05, an hour. Thank you very much.

(1.05 pm)

(The short adjournment)

(2.05 pm)

MR ASTBURY: My Lord, after this witness, we'll need to pause for screens for the next.

MR JUSTICE GOSS: Right, thank you.

(In the presence of the jury)

MR ASTBURY: I call Dr Sally Ogden, please.

DR SALLY OGDEN (recalled)

Examination-in-chief by MR ASTBURY

MR ASTBURY: Could we start, for the record, with your full name, please.

OGDEN: Dr Sally Rebecca Ogden.

ASTBURY: Thank you. We have heard already that you were employed at the Countess of Chester Hospital in the summer of 2015.

OGDEN: Yes.

ASTBURY: And you were employed there in your capacity as a neonatal registrar; is that right?

OGDEN: It is, yes.

ASTBURY: Could you remind us, please, what stage of your training you'd reached in 2015?

OGDEN: So I was ST3, so that was my first neonatal or first registrar job.

ASTBURY: Thank you. I'm going to ask you, please, about a baby called [Baby F] who was born on 29 July with his twin, [Baby E].

OGDEN: Yes.

ASTBURY: I'm going to ask you about your involvement in his treatment in the days that followed.

OGDEN: Okay.

ASTBURY: Were you present for the twins' birth?

OGDEN: I think so, yes.

ASTBURY: In compiling your statement in this case, have you relied on the notes that were made at the time?

OGDEN: I have, yes.

ASTBURY: In that case, please, could we go to tile 5, Mr Murphy.

If we can see the notes behind that, please.

We can see this is a note. Do you recognise the handwriting, doctor?

OGDEN: Yes, that's my handwriting.

ASTBURY: Timed at 6.30 in the evening of 29 July?

OGDEN: Yes.

ASTBURY: And you have completed a summary -- is this on admission to the neonatal unit?

OGDEN: Yes, that's on admission.

ASTBURY: Of [Baby F]?

OGDEN: Yes.

ASTBURY: I wonder, please, could you take us through that note?

OGDEN: I have documented his gestation at 29 plus 5, that he'd been born by an emergency caesarean section. And that the reasons for the caesarean section were absent EDF, which is end-diastolic flow, that twin 1, so for his brother's Doppler, which was the indication for being born premature. Then I've put IUT, so in utero transfer, from the Women's, so they'd come to Chester from Liverpool Women's Hospital prior to delivery.

ASTBURY: Thank you.

OGDEN: I have then documented his weight was 1.434 kilograms and there were no risk factors for sepsis prior to delivery.

ASTBURY: It continues below.

OGDEN: I have written that he was born in good condition, that he cried at birth, and we did delayed cord clamping for 1 minute.

ASTBURY: Pausing there, delayed cord clamping?

OGDEN: So that we waited a minute to cut the cord so he'd remained attached to the placenta during that time.

ASTBURY: And does that in any way relate to the condition of the baby at the time of birth?

OGDEN: So it's difficult to say fully from the notes. You wouldn't necessarily do delayed cord clamping in a baby that was particularly unwell at delivery. But I haven't written anything more specific than what's there. It's standard practice, where possible, to do delayed cord clamping.

ASTBURY: Sorry, your note continues.

OGDEN: So I say, "Brought to the Resuscitaire", and that's where we would have stabilised him in theatre.

ASTBURY: Just in summary, the Resuscitaire is?

OGDEN: It's like the surface, the flat surface with the heat and the gas supply that you would do any sort of resuscitation or stabilisation of the baby on. And there's one of those in the theatre that he will have been born in and we'd have had one for each twin.

ASTBURY: Okay. Sorry, I interrupted.

OGDEN: Then I've written that he was pink and crying initially and his heart rate was more than 100. And then I have written that his respiratory effort became intermittent and he needed some intermittent IPPV, which is inspiratory positive pressure ventilation, so where you have to breathe for him through a mask and a Neopuff piece of equipment. So intermittently he'd paused his breathing and needed me to do it for him through the mask and then his respirations improved and we were just able to give him facial oxygen -- and then I've written with PEEP, which is by holding the mask more tightly on to his face. It gives a

little bit of pressure as well as oxygen, but he will have been breathing for himself at that point.

ASTBURY: So is that all the Resuscitaire?

OGDEN: This is all at the Resuscitaire at birth, yes. I have then written his oxygen requirement increased on the Resuscitaire to about 80%, with the PEEP being given.

So even though he was breathing for himself with the oxygen support and the PEEP pressure that we were giving, he was needing more oxygen and because of that I have said my decision was to give surfactant. The only way to give surfactant is through a breathing tube so I have intubated him a size 3 tube, which was put in 7 centimetres at the lips. And then I've documented the capnograph change, which is a colour change if your tube is in the right place and you're getting carbon dioxide breathed out, which is your indicator that the tube is in the right place and that he had equal air entry with the tube in, and we have given 240 milligrams of surfactant.

ASTBURY: Surfactant is something that babies, premature babies receive to help with their breathing; is that right?

OGDEN: Yes, a lot of premature babies will need that to help their lungs open and close more easily and to reduce the amount of oxygen they need.

ASTBURY: Then you put "commenced on"?

OGDEN: "Commenced on the ventilator at settings of 20/5 and a rate of 40."

So the 20/5 are the pressure settings that the ventilator requires. So 20 is the maximum pressure when the ventilator breathes in for the baby and 5 is the baseline pressure, which is the same as PEEP, to keep his lungs open so they don't fully collapse down.

ASTBURY: Okay. R40?

OGDEN: A rate of 40, so 40 breaths a minute.

ASTBURY: Thank you. Then there's a comment about -- is that cannulation?

OGDEN: Yes. I have written that I attempted to cannulate him -- well, attempted to cannulate twice, and I have put by myself and by the SHO, which was unsuccessful, and then I've documented that we had a gas at that time.

ASTBURY: That would be -- was that blood gas?

OGDEN: Yes, a blood gas.

ASTBURY: Just briefly take us through those figures, please.

OGDEN: The pH is 7.33, which is a normal pH for a neonate. CO₂ of 5.7, which is in the normal range. The lactate, which was 5.4, which is slightly higher than normal but it's very difficult to interpret what a normal lactate is at birth. So often the first lactate is higher than 2. And then I have written his blood sugar is 2.7.

ASTBURY: Thank you. Carry on, please.

OGDEN: Then I have written, "Decision for UVC", which will be because we couldn't get a cannula in, we still needed some access to give the medications we needed to give.

So I have written that a UVC was inserted under aseptic technique by myself and one of the SHOs and that we inserted it to 8 centimetres, that it was bleeding back, which signifies that it's inside a vessel. But I have written that it bounces slightly, so there is a bit of resistance which you sometimes find if it's taking a path towards the blood vessels in the liver.

And I have just documented the calculation of how we came to the 8 centimetres, which is a weight-based calculation, so that it needed to go 6.5 centimetres plus the length of the cord.

ASTBURY: Then some more blood gas results?

OGDEN: Yes. Then we have a repeat blood gas, so a pH of 7.469, a CO₂ of 2.9 and a glucose of 1.9 and lactate of 3.6.

So the pH is higher than we would normally like at this point and the CO₂ is low, which suggests that the baby's getting too much ventilation from the ventilator and needs it reducing.

ASTBURY: Right.

OGDEN: And then the blood sugar has dropped from the previous one but until this point he won't have been receiving any dextrose because he wouldn't have had a line in.

And the lactate had come down from that initial one so was coming down towards normal.

ASTBURY: We can see then that you, given what we've just told us, adjusted the ventilation settings; is that right?

OGDEN: Yes. I reduced both of the pressures so that he was getting less pressure, so 16 with each breath, and the baseline pressure was dropped to 4, and the rate was dropped to 30. So a reduction in the ventilation because of that blood gas.

ASTBURY: And the plan, please, if we just scroll up.

OGDEN: I have written:

"Repeat blood gas in 30 minutes."

Because whenever you have a blood gas that's over-ventilated like that, you don't want the carbon dioxide level to stay that low for a long period of time so you want to do very frequent gases until it gets back to normal range.

A chest X-ray and an abdominal X-ray would be because the baby was intubated and had a UVC inserted.

Some baseline bloods for a full blood count, a CRP, a blood culture, IV antibiotics, vitamin K, nystatin, caffeine, and to start on 60ml/kg per day of 10% dextrose, and then speak to the parents and explain what we've done so far.

ASTBURY: And the dextrose to be via?

OGDEN: To be via the UVC because normally (overspeaking) --

ASTBURY: (Overspeaking).

It appears a little later in the timeline but I think we can deal with it now if we scroll down again.

We can see an X-ray review, same date, at 8 pm, so about an hour and a half after you've made those notes. Just tell us please what the X-ray review told us.

OGDEN: This is just the position of everything that we've inserted. So the ET tube position is the breathing tube. So I've written that was in a good position.

Then for the UVC position, I have written "liver", which would indicate that the path it was taking was heading in the direction of the liver, which would fit with what I'd suggested earlier. When I put it in it felt like it was potentially bouncing towards the liver. That can't stay in that position for a long period of time --

ASTBURY: Pausing there if we read across to the right.

OGDEN: I have written:

"UVC in liver. Line removed."

ASTBURY: Will you have taken that out once you got the X-ray result?

OGDEN: Yes.

ASTBURY: Sorry, carry on to the NGT position.

OGDEN: I have just written that the NGT position is the stomach, so it's in the stomach bubble. Then for the comments I have put that the line was removed because it wasn't in the right position. And at the side I've written that a cannula was then inserted by Dr Jayaram so that the dextrose could be moved from the UVC to the cannula.

ASTBURY: And we can see that below:

"10% dextrose attached as..."?

OGDEN: So I put glucose 2.2, which is slightly low. I don't recall from memory where that 2.2 reading was in relation to moving the lines round.

ASTBURY: And you have signed and dated the bottom of this. Is this, we have heard, a sticker that goes on with --

OGDEN: Yes.

ASTBURY: And you fill it in on the notes?

OGDEN: Yes.

ASTBURY: Thank you. I think -- did that conclude your dealings with [Baby F], certainly on 29 July?

OGDEN: I believe so, yes.

ASTBURY: Did you next come to examine [Baby F] on 5 August?

OGDEN: I think so, yes.

ASTBURY: If we could go to tile 238, please. Your note is timed at 10 am.

OGDEN: Yes.

ASTBURY: That seems to be the same handwriting; is that your handwriting?

OGDEN: Yes.

ASTBURY: Could you just take us through please the note that you made and what you found at 10 o'clock on 5 August?

OGDEN: So I've documented that [Baby F] was reviewed by Dr Saladi. I haven't specifically said if this was the ward round or not, but at that time on that day it's highly likely that this was the consultant ward round and I was documenting on behalf of Dr Saladi, which is why I have put his name at the top. So reviewed by Dr Saladi who was the consultant on call. Then we have written that the history overnight was noted and we have summarised what we had found that day.

So I put V, indicating his ventilation status, and then I have put the letters SVIA, which means self-ventilating in air, which essentially means he is breathing for himself without any support and he's not needing any oxygen. And his saturations are 100% in the air that he's in.

I have then written F for the fluids of where he was that morning, so his enteral feeds have been stopped overnight, so that's his milk feeds. I have put an arrow up, so increased, and then to 165, so 165ml/kg per day of his total fluid volume of TPN. And then I have documented his BM, his blood sugar, had been low and that he'd had three dextrose boluses overnight, and then that the last bolus was given 30 minutes ago, but the sugar was now 1.3, and that he'd had one dark milky aspirate.

ASTBURY: I'm going to ask you to pause there. We've seen this morning, and I'm not going to go back to it unless I'm asked to, but we have seen the nursing fluid chart which represents what appears to be his sugar levels and his boluses. Is that where you'd have got that information from?

OGDEN: Yes.

ASTBURY: All right. Sorry to interrupt. Carry on.

OGDEN: Not, it's okay. I wouldn't have taken those blood sugars myself so they'll have been taken from other pieces of information.

And then I have written M for the medication he was currently on, so caffeine, nystatin, cefotaxime and teicoplanin.

And then the S is for sepsis. He had been re-screened overnight and that is when the cefotaxime and the teicoplanin, which are both antibiotics, had been added. But those initial blood tests

from his infection screen had shown a CRP less than 1, which is normal, and a white cell count of 3.6.

ASTBURY: So the purpose of giving the antibiotics?

OGDEN: Was to cover for whether the concerns overnight had been due to an infection.

ASTBURY: Okay. But not suggesting it from the results but preventative rather than reactive; is that right?

OGDEN: Yes, and it sometimes takes up to 24 hours to get findings back on the CRP or for blood culture results to come back, so you might not necessarily know for certain if there was an infection or not immediately after the antibiotics had been started.

ASTBURY: Scroll down please.

OGDEN: Then I have written that L for line. So he has a long line in his right leg and it's day 7. I've written N for neurology. So handles well and then I have written CRUSS, which stands for cranial ultrasound scan, and I have written an N in a circle which means normal. And I have just put we've seen it on the machine as it wasn't printed at that point. But that would have been reviewed by Dr Saladi if he was with me at that time.

ASTBURY: Then is this on examination?

OGDEN: It is, yes. So on examination, he was alert, he was handling well, he was moving all four limbs, normal tone. Then heart sounds 1 plus 2 plus 0, which is a way of writing normal heart sounds. His chest was clear.

No increased work of breathing. No abdominal wall oedema or erythema, his abdomen was not distended, and it was a soft abdomen and I have written BS for bowel sounds, which would indicate that bowel sounds were present, because I haven't written anything more specific, but I don't recall precisely, only what's written.

Then I have written that he had swelling of his right groin at the site of the long line and it was indurated.

ASTBURY: Could you explain that, please?

OGDEN: So that the -- I don't remember directly what his leg will have looked like but from what I've documented, the right groin was bigger and swollen in comparison to the left groin, which will have been what the comparison was against.

And a long line is a peripherally inserted central line, so it's inserted further down the leg and the tip of it where the fluid is infusing is higher up. So the tip of that long line would probably have been around his groin, even though the insertion site was probably nearer his foot.

ASTBURY: Okay.

OGDEN: So if there was a problem with the line, you would expect to see it at the point that the tip was rather than the point that it went into the skin necessarily.

So the swelling in the right groin may well be related to the line itself.

ASTBURY: Okay. I think that's -- is that anterior fontanelle?

OGDEN: It is. AF, for anterior fontanelle, was soft. And then I have documented "femorals strong". I would presume I mean his femoral pulses were strong although I have written:

"Unable to palpate right."

And I don't know what that's in reference to, if that's the femoral pulse on the right or something else because I have not clarified further.

ASTBURY: It might be in the next line if we go on to the next line.

OGDEN: Yes. I have written:

"The thigh on the right side anteriorly/posteriorly was swollen and full."

This thigh was swollen and that his heart rate increased on palpation of that leg.

ASTBURY: Was what, if anything, did you conclude from the swelling that you noted --

OGDEN: The concern with that those findings on examination were that there was a problem with the line that was inserted in that leg and for some reason there was -- it could have been either an infection or blockage or it had stopped working, but there was a problem with the line that was delivering the medications and that needed to come out and it was probably painful for him because his heart rate went up as you palpated that and touched that area.

ASTBURY: Right. So if we scroll down again please.

OGDEN: Then I have written the plan, which was probably a joint plan between myself and Dr Saladi as I've documented, that he was there too. So the plan was to stop the TPN via that long line. To give another bolus of dextrose, to move the TPN to a peripheral line and put a new long line in.

ASTBURY: Just pausing there, you are repeating the bolus of dextrose; what was the purpose of that?

OGDEN: I think because earlier on I had documented his sugar was 1.3 and that was low and you need to bring it up quickly by giving an amount of dextrose quickly to bring his sugar up to a normal range.

ASTBURY: You'd seen through the night a series of similar boluses; is that right?

OGDEN: Yes.

ASTBURY: Sorry, again I interrupted, I apologise, I just wanted to cover that. So new long line?

OGDEN: Yes. Then an abdominal X-ray to look at the position of the new long line. To carry on the antibiotics. And to review his feeding later if everything settled down after the new long line was inserted to see if the feeds could be restarted. That would be a combination of the blood sugars as well as his clinical findings because you would want to have control of his blood sugars before you started introducing milk back into the equation of what his blood sugars would be.

ASTBURY: Okay, right.

OGDEN: And then to send the tip of the long line of MC&S, so for microscopy and culture and sensitivity, to see if there's an infection in the line which is causing that swelling to the leg.

ASTBURY: So do you recall if the long line was replaced?

OGDEN: I think I have documented in the notes that I put a new line in.

ASTBURY: If we go to perhaps line -- tile 244.

OGDEN: Yes. I have documented at 10.30 that a new long line was inserted into the left foot, so on the other leg, inserted to 15 centimetres via an aseptic technique, and we were awaiting an X-ray to confirm the position.

ASTBURY: You told us a moment ago that you inserted the long line; is that your recollection?

OGDEN: It's only from what it says there. I don't recall. The reason -- the fact I documented it would suggest I possibly did, but I don't recall directly doing it.

ASTBURY: Okay. You don't have any recollection of having fitted the long line. Do you have any recollection of what happened to the various fluids that [Baby F] was receiving when the long line was changed?

OGDEN: No.

ASTBURY: Move on then please to 11.40. We can see below the X-ray review on the same page.

OGDEN: This is a sticker for that X-ray for that line, so from 11.40, so that the long line position was satisfactory and then I've also commented that there was a gas-filled abdomen but no fixed loops, no free air. The fixed loops and free air would be abnormal signs and that they weren't present.

ASTBURY: Okay. If we can go next please to tile 252. Just take a moment to look at that. Tell us what that form is please.

OGDEN: That appears to be a request for the tip of the long line that we had taken out of his right foot to be sent off to be tested for an infection to see if that's what was causing the swelling to the leg.

ASTBURY: We can see below the first line, at the top of the substantial box, we can see the patient is [Baby F], twin 2. This is ordered by yourself?

OGDEN: Yes.

ASTBURY: And if we go across, it seems to be that that was certainly entered into the computer at 11.28 am.

OGDEN: Yes.

ASTBURY: So in between that note we looked at at 10.30 --

OGDEN: Yes.

ASTBURY: -- and the sticker timed at 11.40 when you confirmed the position of the new long line?

OGDEN: Yes.

ASTBURY: Thank you. I was helpfully reminded that you also saw [Baby F] on 1 August, but I'm not going to take you to that unless anyone thinks it's important. I'm concentrating for now on 5 August.

Did you see [Baby F] again that day?

OGDEN: I don't recall. If it's written in the notes I may have done.

ASTBURY: All right. I think the next entry is at line 255 -- sorry, tile 255. That probably mirrors the sticker that we've just looked at.

If we go behind it, please. There we can see that.

OGDEN: Yes. I have just written, "To use the long line".

ASTBURY: Thank you. Bear with me one second, please.

OGDEN: Yes, I have written to use the long line, that the old long line was removed and then I've documented a repeat blood sugar of 2.4, which had increased from the previous one and now we had a new line in and I have just written "Repeat 2 hours".

MR ASTBURY: Okay. Thank you. I have no more questions for you.

MR MYERS: My Lord, we didn't require Dr Ogden to be called and we have no questions for her. Thank you, Dr Ogden.

MR JUSTICE GOSS: Thank you very much, Dr Ogden.

MR ASTBURY: Does my Lord have any questions?

MR JUSTICE GOSS: I don't have any questions. Thank you very much. Thank you for coming to give evidence. I'm just checking to see, you will know whether you're required again or not.

OGDEN: I think I might be.

MR JUSTICE GOSS: Yes. What I said to you previously still stands obviously.

Thank you very much for making yourself available and giving your evidence this afternoon.

(The witness withdrew)

MR JUSTICE GOSS: We have to have a break now because the screens are going to be put back up for the next witness. So this will

be our afternoon break, all right? So use the time if you need to. You know what I mean by that. Thank you.

(2.33 pm)

(A short break)

(2.43 pm)

MS SOPHIE ELLIS (recalled)

Examination-in-chief by MR ASTBURY

(Inaudible: no audio feed from court)

(2.45 pm)

MR ASTBURY: -- 5 August. Do you have any recollection of the shift?

ELLIS: I don't, no.

ASTBURY: Have you, in attempting to assist the police, had the opportunity to see the notes from the shift?

ELLIS: Yes.

ASTBURY: I wonder then if, in that case, we can go straight to the notes through the presentation I think you've seen before and start with tile 100, please, Mr Murphy.

This, by way of refreshing your memory, is a representation of those who were on duty coming on duty at 7.30 that evening. We can see the names of the consultants, the junior doctors, perhaps most importantly for these purposes the registered nursing staff, Belinda Simcock, [Nurse A], Lucy Letby and yourself.

ELLIS: Yes.

ASTBURY: And there were two nursery nurses named Valerie Thomas and Cheryl Cuthbertson-Taylor in addition.

If we go next, please, to tile 101. That tells us, if we look at it, that the baby to whom you were designated on that particular shift had the initials EJ.

Unfortunately, this document is unable to confirm exactly where EJ was in the nursery on that shift.

Do you have any recollection?

ELLIS: I don't, no.

ASTBURY: Could we go next, please, to tile 168. I'm going to take you, Nurse Ellis, to each entry that has your name on it during the course of the shift.

If we click into that, please. That's a prescription, correct me if I'm wrong, for an antibiotic by the name of cefotaxime?

ELLIS: Yes.

ASTBURY: If we look down, we come out of the tile -- it's probably quicker to do it that way -- we can see that that was administered at 2.10 in the morning --

ELLIS: Mm-hm.

ASTBURY: -- according to the record by yourself and Belinda Simcock.

ELLIS: Yes.

ASTBURY: Just go to the next tile, please. The same two nurses.

02.12, administering teicoplanin. Is that another antibiotic?

ELLIS: Yes.

ASTBURY: 02.30 now is the next tile, please. Sodium chloride?

ELLIS: Yes.

ASTBURY: If we go next, please, to tiles 175 and 176. Again it may be that we don't need to go behind these, but this is, on the face of it, the administration of those medications being updated on the computer --

ELLIS: Okay.

ASTBURY: -- 15 minutes or thereabouts afterwards.

ELLIS: Okay.

ASTBURY: We can perhaps just confirm the medication by going to the next page. So that's the teicoplanin?

ELLIS: Yes.

ASTBURY: If we go back again, please. Just the first page, please, Mr Murphy.

That's the entry confirming the sodium chloride at 02.13?

ELLIS: Yes.

ASTBURY: Back again, please. If we go along to tile 182, we can see further saline being administered at 2.55 am?

ELLIS: Yes.

ASTBURY: Prescribed by Dr Wood, administered by yourself and Belinda Simcock; is that correct?

ELLIS: Yes.

ASTBURY: If we go to 190, just behind the first page, please, there's the confirmation being entered into the computer of the cefotaxime earlier in the morning at 2.10.

ELLIS: Okay.

ASTBURY: That reflects the note in relation to [Baby F] as far as that shift is concerned and your name. Can I ask you this: did you at any time, Nurse Ellis, administer [Baby F] with insulin on that shift?

ELLIS: Absolutely not.

MR ASTBURY: Thank you. Wait there, please.

MR MYERS: My Lord, we didn't require Nurse Ellis to attend and we have no questions for her.

MR JUSTICE GOSS: Right. That completes your evidence this afternoon. Thank you very much for coming and giving it. You will be coming back again to give evidence. In the meantime, as I've said to you before, please don't speak to anyone about anything to do with this case by any means.

ELLIS: Yes.

MR JUSTICE GOSS: We'll see you again some time in the future.

ELLIS: Okay, thank you.

MR JUSTICE GOSS: Thank you. Just remain where you're sitting for the moment, please.

Sorry about this, members of the jury. You'll just have to slip out now whilst the screens are removed. So this is just a two-minute break.

(Pause)

MR MYERS: Just before Nurse Ellis departs, I know your Lordship has been in the practice recently of directing witnesses of not talking and not following anything on LiveNote (sic) or anything like that. Just as a precaution we would be grateful if that could continue because there are a number of witnesses still to come who it would be beneficial if that warning were given.

MR JUSTICE GOSS: I can't recall whether you were one.

I said -- well, don't seek any information about this case, read any reporting of it on LiveNote or listen to any reporting of it on LiveNote providing you with details.

The purpose of it is simple. I'm not suggesting that it would influence you, but it may influence you in what you came to say if you'd heard what someone else had said.

ELLIS: Yes, I understand.

MR JUSTICE GOSS: Therefore the best thing is don't read anything about the case --

ELLIS: Okay.

MR JUSTICE GOSS: -- until it's all over.

ELLIS: Okay.

MR JUSTICE GOSS: All right?

ELLIS: Yes.

MR JUSTICE GOSS: Thank you very much. Thank you, Mr Myers.

Thank you very much.

Everyone else in court apart from the lawyers will now have to leave the courtroom, I'm afraid. Just wait there for a minute. Thank you very much.

(Pause).

MS BELINDA WILLIAMSON (recalled)

Examination-in-chief by MR ASTBURY

MR ASTBURY: Ms Williamson, you've given evidence already concerning your care of [Baby E] in this trial. I'm going to ask

you some questions in a moment about your involvement with [Baby F], his twin brother.

Before we do, I just want to go back to the last time you gave evidence, please, and ask you to look at a document which I hope is ready at J28279.

MR JUSTICE GOSS: I think the witness should have formally identified herself for the sake of the record.

MR ASTBURY: Very good, sorry. Would you state your name again, please?

WILLIAMSON: Belinda Williamson.

ASTBURY: Thank you, my Lord.

Ms Williamson, you may recall, I certainly do, being shown a document, a feeding chart, in relation to an unrelated baby, if I can put it that way, I having suggested you were responsible for the feed at 10 o'clock and you corrected me by telling me that it wasn't your signature (overspeaking) --

WILLIAMSON: Correct.

ASTBURY: That -- if we can come out and look at the document.

That was dated 4 August and the document I should have been showing you was dated 3 August. So if I can ask Mr Murphy to scroll down to the preceding page, please.

We can see in the top left the correct date, 3 August, and the feeding chart for this particular baby JE. I'm going to ask you to look at the entry for 10 o'clock on this one, please.

WILLIAMSON: Yes.

ASTBURY: Are you able to help us with whose signature that is?

WILLIAMSON: That's mine for 10 o'clock.

ASTBURY: Thank you. I apologise because that was entirely my mistake and thank you for correcting it first time round.

So having confirmed that, can we return, please, to [Baby F]. You told us on the last occasion of your position at the Countess of Chester Hospital in the neonatal unit and also you told us of some of the events on the shift beginning on the 3rd into 4 August of 2015 when, sadly, [Baby E] passed away.

You weren't initially allocated a baby on that shift; is that correct?

WILLIAMSON: No, I think I had that baby that you've just asked me about for 10 o'clock, I think is what you said.

ASTBURY: But did there come a point when in fact you did start to care for [Baby F]?

WILLIAMSON: Yes.

ASTBURY: And at what stage in the shift was that?

WILLIAMSON: It would have been when the other twin became unwell, I presume.

ASTBURY: Were you sharing that care with anybody?

WILLIAMSON: In my notes I have documented I shared care with Lucy.

ASTBURY: If we can go to those notes, please, at tile 21. We can see here a note written in retrospect at 05.58 with your initials alongside:

"Shared care by Nurse Letby and myself of [Baby F] due to resus of twin 1."

WILLIAMSON: Yes.

ASTBURY: The entries then you have continued with. They relate to [Baby F] and his care through the course of that shift; is that correct?

WILLIAMSON: Yes.

ASTBURY: "Remains nursed on Optiflow."

Tell us what the figures mean, please, alongside that?

WILLIAMSON: So he's 7 litres of flow in anywhere between air to 30% on that high flow/Optiflow. So some people say Optiflow, some say high flow, it's the same machine.

ASTBURY: Okay. And those figures, 21 to 30, are percentages, are they?

WILLIAMSON: Yes.

ASTBURY: Of oxygen?

WILLIAMSON: They are a fraction, so FiO_2 is the fractional inspired oxygen amount, but percentages -- you could use percentages, so 21 to 30%.

ASTBURY: Air entry?

WILLIAMSON: Right equals left.

ASTBURY: Symmetrical chest movement?

WILLIAMSON: Yes, that's just saying that they are equal.

ASTBURY: Just explain the next line please to us.

WILLIAMSON: So:

"Occasional self-reverting desaturations to the mid 80s observed."

So throughout the shift I have noticed that he's been desaturating to the mid 80s but he has corrected himself and I have not had to intervene.

ASTBURY: "Tolerating feeds."

Would that be milk feeds?

WILLIAMSON: They'll be milk feeds.

ASTBURY: Currently the rate at the time you wrote this was 11ml every 2 hours?

WILLIAMSON: Yes.

ASTBURY: TPN was continuing via a long line?

WILLIAMSON: Yes.

ASTBURY: At that point there was no redness or swelling of the limb observed?

WILLIAMSON: Correct.

ASTBURY: "Has" -- is that passed urine?

WILLIAMSON: "Passed urine, bowels opened."

ASTBURY: "Abdomen soft to touch and non-distended. Active and alert with handling. Otherwise settled."

WILLIAMSON: Yes.

ASTBURY: Can we go next, please, to tile 23. Continuing with the night shift of the 3rd into the 4th. If we can first of all begin at the bottom of the page to see whose initials appear. Do we see your initials at the bottom of the page?

WILLIAMSON: Yes.

ASTBURY: Two entries, I think. If we can scroll up and check the time, 1 and 2 am.

WILLIAMSON: 1.00 and 2.30.

ASTBURY: 1.00 and 2.30, I should say. And not only can we see there the entries that you made in respect of heart rate and, if we scroll up, respirations, temperature, we can see also, if we scroll down a little, they continue into the following shift, is that right, when other nurses take over?

WILLIAMSON: Yes.

ASTBURY: If we go back up and look at those three observations together, it gives a picture of his heart rate, respirations and temperature, all the way through until 5 o'clock the following evening?

WILLIAMSON: Correct.

ASTBURY: That being 5 August.

Likewise if we go to tile --

WILLIAMSON: You said to the 5th. It's not, it's just the 4th. So you've got 01.00 on the 4th to 5 o'clock on the 4th.

ASTBURY: Right. You're quite right because the next shift goes into the 5th. I'm jumping the gun. Thank you.

The intensive care fluid chart, please. I'm sure if your initials appear on that -- it's a little bit small, I apologise. We can zoom in a little bit, Mr Murphy.

WILLIAMSON: The first two and then the fourth along.

ASTBURY: Thank you. If we can look at those entries first, please, those first three or four in fact.

We have come to call these equipment settings on the -- certainly on the sequence of events chart.

You have told us the first, second and fourth entries are yours?

WILLIAMSON: Yes.

ASTBURY: Suggesting that you took those readings at 1, 2 and 4 am respectively?

WILLIAMSON: Yes.

ASTBURY: Thank you. If we go back to the right-hand side of the page and just see if your initials appear anywhere there.

WILLIAMSON: The second column or second box. That one.

ASTBURY: So that again is 2.30, which is, I think, confirms with the observation chart that we looked at --

WILLIAMSON: Yes.

ASTBURY: -- with the yellow stripes on.

If you just look at that for a moment. Does that confirm what you are saying about the enteral feeds on the left-hand side?

WILLIAMSON: Yes.

ASTBURY: 10, 10 --

WILLIAMSON: And then 11.

ASTBURY: -- increased to 11 at 5.30, and then 7 and 9 o'clock in the morning, 11 again. Not your entries, I understand, but just going back to what you're telling us about feeds.

WILLIAMSON: Yes.

ASTBURY: Go next, please, to tile 41. We don't need to go back to that. That indicates, I think, that at 6.05 you assisted with medication, you and Ms Letby sharing the care of [Baby F]?

WILLIAMSON: Mm-hm.

ASTBURY: That, I think, is the last entry on his records for that particular shift, so if we could move forward, please, to tile 100.

This is the following night shift, the 4th into the 5th, as you rightly corrected. We can see there those on duty. Consultants, junior doctors, nursery nurses and as far as registered nursing staff, yourself the shift leader, [Nurse A], Lucy Letby and Sophie Ellis.

WILLIAMSON: Yes.

ASTBURY: Do you have any recollection of the shift?

WILLIAMSON: No.

ASTBURY: We can go then to the next tile, Mr Murphy. You have seen this on the last occasion, the representation of babies, their allocations and to whom they are allocated. As you were supervising on this shift, you weren't given a baby?

WILLIAMSON: Correct.

ASTBURY: Tile 130, next, please. Again without necessarily having to go behind the tile, we can see there that you assisted [Nurse A] with benzylpenicillin at 9.33 pm.

WILLIAMSON: Yes.

ASTBURY: 9.34, assisted her with sodium chloride?

WILLIAMSON: Yes.

ASTBURY: Then if we can look at the note, please, on the next tile. I think you've dealt with this last time. Having administered medication, it's then entered into the computer; is that right?

WILLIAMSON: Yes.

ASTBURY: If we can scroll down. We've gone too far.

(Pause)

It seems there -- third box up?

WILLIAMSON: Yes.

ASTBURY: Administered 21.34?

WILLIAMSON: Yes.

ASTBURY: Admin user. I think you explained last time, this was covered earlier, that whoever's logged on to the computer appears as user?

WILLIAMSON: Yes.

ASTBURY: And the second name, which is added in as co-signer, isn't necessarily simply the co-signer, it's just the two names who are involved?

WILLIAMSON: Correct.

ASTBURY: Thank you, we can go back.

Go to tile 145 next, please. If we look behind that tile. This is a document that we've had the opportunity to look at already, but if I can just scroll down, please, to the day 7 entries, two of them. Do you recognise your signature on any of those entries?

WILLIAMSON: On the lipid, on the day 7, so 4/8, the lipid at 03.

ASTBURY: Right. So you have -- you're one of the two signatures in the box, the nursing box, at 03.20 --

WILLIAMSON: Yes.

ASTBURY: -- on 5 August? Adding lipids in the quantity indicated in the chart?

WILLIAMSON: Yes.

ASTBURY: Do you have any recollection of doing that?

WILLIAMSON: No.

ASTBURY: In your capacity as shift leader, do you recall whether anything in the early hours of that morning in respect of [Baby F]'s condition was brought to your attention?

WILLIAMSON: Not from memory, no.

ASTBURY: If we go to tile 181, please, and we look behind the...

Thank you.

If we scroll down to the entries in the morning of 5 August, we see the last two entries on that line at 1.54 and 2.55 --

WILLIAMSON: Mm-hm.

ASTBURY: The blood glucose levels, I think, are in the third column from the right; would you agree? Do you need to scroll back up to check?

WILLIAMSON: You'd have to scroll back up. Yes.

ASTBURY: Thank you. With your experience, how would you describe those two entries for blood glucose levels?

WILLIAMSON: Low. Less than what we'd want of 2.6.

ASTBURY: Is that the type of thing that would have been brought to your attention?

WILLIAMSON: They would have told me, yes.

ASTBURY: If we go, please, next to tile 185. This is the observation chart, as I am sure you'll recognise, which starts just before your night shift began; would that be right?

WILLIAMSON: Yes.

ASTBURY: Then we can see, certainly in respect of heart rate there, we can track across from left to right and see the entries that were being recorded in respect of heart rate. Again, would that have been brought to your attention?

WILLIAMSON: Yes.

ASTBURY: Go down, please, to respirations. No further because that helps us with the time, between 1 and 4 am, or thereabouts. We've heard that the yellow portion is the portion of concern, if I can put it that way.

WILLIAMSON: Yes.

ASTBURY: So alongside the heart rate, would that also have been brought to your attention?

WILLIAMSON: Yes.

ASTBURY: And if we can go next, please, to tile 183. If we can look at the right-hand side of the page, please, the fluid requirements, fluid balance chart.

Looking there, the figures in circles are in a column entitled "blood sugar".

WILLIAMSON: Yes.

ASTBURY: Do they reflect blood sugar readings through the course of that night shift up until 7 or 8 am?

WILLIAMSON: Some are recorded there, but some are recorded on that previous chart you had, the blood gas chart.

ASTBURY: Can you also see to the left of that, a bolus has been administered during the course of the shift?

WILLIAMSON: Yes.

ASTBURY: Again is that the type of thing that will have been brought to your attention during the course of the shift?

WILLIAMSON: Yes.

ASTBURY: I appreciate some of the later ones are after you have gone off duty at 8 o'clock or thereabouts.

WILLIAMSON: Yes.

ASTBURY: Can we go next, please, to tile 167? That will reflect one of those boluses that we saw entered on the fluid chart, will it?

WILLIAMSON: I don't know whether we were still on paper or not, so it may be just to co-sign to match a paper chart or it might be the actual prescription.

ASTBURY: Let's make sure we look at it then, please. Tell us what it shows you.

WILLIAMSON: So it's a paper chart, so yeah.

ASTBURY: It relates to the -- the 02.05 bolus, which is I think four down from the top of this page? Are you able to spot your initials or signature in there?

WILLIAMSON: At 02.55 I can say yes. 02.05, not sure. 03.35, looks like mine on the bottom. 04.10, on the top, looks like mine.

ASTBURY: Okay. So would it be fair to say that the requirement for these boluses not only was brought to your attention but you played a part in their administration?

WILLIAMSON: Yes.

ASTBURY: If we go next, please, to tile 168. Just for the sake of completeness, we can see there, we don't need to go behind it, that you were involved in the administration of cefotaxime, which we understand is an antibiotic?

WILLIAMSON: Yes.

ASTBURY: Yourself and Sophie Ellis at 2.10?

WILLIAMSON: Yes.

ASTBURY: Similarly, teicoplanin at 2.12?

WILLIAMSON: Yes.

ASTBURY: And at 2.13, sodium chloride?

WILLIAMSON: Yes.

ASTBURY: Those medications seem to have been entered into the computer. If we can go to 175, please. At 2.26 we can see two of them there at tiles 175 and 176. And if we go to 182, please, the third entry for the saline into the computer.

That reflects the presence of your signature or initials on each of the relevant notes for that shift?

WILLIAMSON: Yes.

ASTBURY: Can I ask you this: did you during the course of that shift at any stage administer [Baby F] any insulin?

WILLIAMSON: No.

MR ASTBURY: Thank you.

Cross-examination by MR MYERS

MR MYERS: There's just one matter I'd like to confirm, please, Ms Williamson, and it's just this: when a TPN bag is put up, is the period that it would normally run for, barring problems, 48 hours?

WILLIAMSON: Yes.

MR MYERS: Thank you.

My Lord, that's the only matter that's left to confirm.

MR JUSTICE GOSS: Thank you very much.

I have no questions. Thank you very much indeed and thank you for coming back and giving evidence.

MR ASTBURY: That concludes the witnesses that we have today.

MR JUSTICE GOSS: As far as this witness is concerned?

MR ASTBURY: Yes.

MR JUSTICE GOSS: Ms Williamson, you will be coming back to give evidence again, so what I said to you before about not speaking to anyone about this, don't read any news feeds or look at any

news feeds or anything like that about this case. Thank you very much.

MR ASTBURY: We had anticipated four witnesses today, we've made good progress, I think, this afternoon.

MR JUSTICE GOSS: Yes. The pharmacist, is there anything that can be done in anticipation of that evidence or is it part of the evidence?

MR ASTBURY: It will be part of the evidence. There are various things to show the jury as well and he to explain for us.

MR JUSTICE GOSS: So there's no point in -- no videos or anything to watch?

MR ASTBURY: No.

MR JUSTICE GOSS: All right.

So there's going to be a -- will he be the first witness tomorrow?

MR ASTBURY: He will not be joining us until next week, my Lord. Tomorrow we have three doctors and a nurse from the Countess of Chester Hospital.

MR JUSTICE GOSS: Right. There we go.

Sorry we're finishing a bit early again. It's very difficult to judge how long witnesses are going to take and, as I said to you at the outset and I've repeated more than once, people can't be brought here and then kept waiting and then can't give their evidence, so I'm afraid you are inconvenienced to the extent that you have a slightly earlier day than would otherwise be the case. All right?

But the momentum is being maintained and we are getting through the witnesses as scheduled.

MR ASTBURY: Yes.

MR JUSTICE GOSS: I mean they're completing their evidence.

MR ASTBURY: We are proceeding as we anticipated, certainly not any slower.

MR JUSTICE GOSS: Thank you very much.

Just the usual reminder as to your obligations as a juror and because we had another witness who's screened, I'm sure that you

ignore the fact of screens in any event as I told you. You appreciate it does, as I said, have no significance in relation to any particular witness, having a screen or any witness not having a screen. All right? Thank you very much indeed.

(In the absence of the jury)

Housekeeping

MR JUSTICE GOSS: Any further views in relation to Friday or are we going to know tomorrow?

MR JOHNSON: Losing Monday really threw us out, I'm afraid.

We had everything, I wouldn't say perfectly planned, but doing our best --

MR JUSTICE GOSS: I didn't want to --

MR JOHNSON: At lunchtime we didn't think we were going to get through those three witnesses this afternoon. It's incredibly difficult to judge accurately.

MR JUSTICE GOSS: I know. Shall we wait and see where we are at the end of tomorrow then?

MR JOHNSON: We. We've got to do Professor Hindmarsh.

I don't think there will be the slightest problem in getting through his evidence. The real issue is what else we do. Perhaps I can speak to Mr Myers.

MR JUSTICE GOSS: I'll just leave it with you, but the important thing is we've got to finish shortly after 2.30.

MR JOHNSON: 2.30, right.

MR JUSTICE GOSS: Well, I think... Or 2.40.

MR JOHNSON: There's not a problem. I think the time I wrote down anyway was 3 o'clock.

MR JUSTICE GOSS: It's because the trains are getting increasingly difficult --

MR JOHNSON: I know that.

MR JUSTICE GOSS: -- by reason of lack of them.

MR JOHNSON: One way we can massage things a bit is to do what we did, I think, last weekend or the Friday before, which was just have half an hour for lunch on Friday if it comes to it.

MR JUSTICE GOSS: If necessary, but it is really the 10 o'clock start. It doesn't seem to cause a problem for any of the jury.

MR ASTBURY: No.

MR JUSTICE GOSS: I don't know whether it causes anyone else a problem.

MR MYERS: It does my Lord.

MR JUSTICE GOSS: It does for you?

MR MYERS: It does usually, yes. With the timing of the witnesses, as will be apparent, there are a number of witnesses being called in this section for whom we have no questions. That's a matter entirely for the prosecution. No doubt they have their reasons. So it means that we will, as far as I can see, get through what's scheduled.

So far as Friday is concerned, certainly where Professor Hindmarsh is concerned, while there will be some questioning, I don't anticipate it will be very lengthy, so if the concern is that his evidence is completed, that should be possible.

As to whatever else the prosecution wish to include on Friday, we can consider that, but we can still deal with the witness we have to deal with in that time and maybe deal with some further evidence even if we start at 10.30 and maybe have a truncated lunch break. We can still use the time.

MR JUSTICE GOSS: I'll leave it to you to discuss.

MR MYERS: We'll do our best, my Lord.

MR JOHNSON: As presently timetabled, we're due to finish this part of the case on either Tuesday or Wednesday next week, so optimistically Tuesday, pessimistically Wednesday.

MR JUSTICE GOSS: All right. Thank you.

MR JOHNSON: That will be 6 days. We're working on 5 days per case as a general rule of thumb. That will make this 6 days.

MR JUSTICE GOSS: Because we lost a day. It is the time of year when people become indisposed.

MR JOHNSON: I thought you were going to say something else.

MR JUSTICE GOSS: So that should be factored in. I'm not in any way critical, I know everyone does their best to try and occupy a reasonably full day, and we're not doing badly. There's a lot to get through.

MR JOHNSON: There is. Speaking for myself, sometimes the odd slightly truncated day is helpful in the sense that there's so much to keep up in the air. I'm sure that applies to the jury as well.

MR JUSTICE GOSS: Yes, and to (overspeaking). There is a vast amount of material. Right, thank you very much.

Will you be wanting to see the defendant?

MR MYERS: Briefly, my Lord, yes please.

MR JUSTICE GOSS: So before you take her away, please, from the building, Mr Myers will come down.

MR JOHNSON: We'll circulate a proposed running order to everyone, including your Lordship, so at least you know what's going on, by about 5 pm.

MR JUSTICE GOSS: It's not a problem.

MR JOHNSON: I know it isn't, but then Mr Myers and I, perhaps later on this evening, can discuss it and try to estimate things.

MR JUSTICE GOSS: It's really just to know whether we -- it doesn't look as though we will need to start before 10.30 on Friday.

MR JOHNSON: I don't think so.

MR JUSTICE GOSS: From what Mr Myers said (overspeaking) and if it does cause difficulty then it'll be 10.30.

MR MYERS: Thank you.

MR JUSTICE GOSS: All right.

(3.30 pm)

(The court adjourned until 10.30 am on Thursday, 24 November 2022)